

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

173,3

F73F

FUNDAMENTALS OF A WARTIME FOOD PROGRAM

Report to the Food Advisory Committee
by the
Sub-Committee on United States Food Allocation Policy

Washington, D. C.
July, 1943



387

1

89
100

4120
100

FOOD ADVISORY COMMITTEE
Sub-Committee on United States Food Allocation Policy
Washington, D. C.

July 31, 1943.

The Honorable
The Secretary of Agriculture

Dear Mr. Secretary:

I take pleasure in transmitting for your consideration as Chairman of the Food Advisory Committee our report on "Fundamentals of a Wartime Food Program". This report grew out of the instructions transmitted by you under date of March 12, 1943, to the Sub-committee on United States Food Allocation Policy.

In proposing the fundamental changes set forth in the report, we are aware of the administrative and technical problems which their adoption might involve. We have attempted to set forth a sound, comprehensive program with primary emphasis upon general principles and desirable goals. On all phases of the report we have received invaluable assistance from the experts of the Department of Agriculture and other agencies in the various fields of food production and distribution. Our debt to them is great, and we refrain from mentioning them individually only because none of them took part in formulating the conclusions as a whole, for which we alone are responsible.

In a report covering so broad a field, it is only natural for each member of the Sub-committee may have reservations with respect to particular points and might have made certain changes if the drafting of the report had been solely in his hands. However, the report represents the consensus of the Sub-committee, and I am authorized to submit it to you as the Sub-committee's report for your consideration.

Respectfully,

/s/ E. W. Gaumnitz,
Chairman

Members of the Sub-committee:

E. W. Gaumnitz, Chairman

Office of Economic Warfare

Abe Fortas,

Department of Interior

Dewey Anderson,

Department of State

Bernhard Knollenberg,

Office of Lend-Lease Administration

Brig. General Carl A. Hardigg,

War Department

J. M. Cassels, Secretary,

War Food Administration

SUMMARY CONCLUSIONS AND RECOMMENDATIONS

Part I -- U. S. Food in Relation to World Supplies

1. United Nations food supplies are inadequate to meet present essential war needs, and will continue to be inadequate for the duration of the war and for several years thereafter, unless both domestic and foreign food development programs are pushed with all possible speed and vigor.
2. The United States has never been and cannot become the food basket of the United Nations. U. S. food production, though impressive in itself has never been more than a small fraction of total world production, and U. S. exports do not constitute more than a small percentage of the total food moving in world trade.
3. The greatest increase in United Nations food supplies with the least expenditure of critical resources can be made through vigorous development of food production abroad, where there are considerable amounts of unused or poorly utilized land and labor.
4. A single U. S. government agency must be made responsible for the systematic encouragement of the production of selected foods abroad; and technical aid, price incentives, agricultural equipment, etc. must be supplied to encourage this development where in the national interest.
5. While aggressive leadership by the U. S. and Britain is needed, participation by the other members of the United Nations should be sought to deal with such problems as assignments of areas, allocation of production resources, and setting of production goals.

Part II - Meeting Essential Food Needs.

6. The fundamental purpose of food is nutrition, and the first purpose of a U. S. war food program must be to provide the necessary nutrients for every American to play his best part in the war effort.
7. The most immediate and impressive gains can be made through better use of existing resources of land, labor, and equipment and through shifting resources from certain crops and livestock enterprises to others. In general, foods for direct human consumption yield more nutrients for the resources employed than livestock enterprises; and dairy enterprises are usually more efficient nutrient producers than meat. Despite biological, soil and other limits, considerable shifts from less efficient to more efficient foods are possible in 1944 and 1945.
8. Another large nutrient increase is possible through better use of crops we now produce, especially milk, cereals, soybeans, peanuts and cottonseed meal. Over one-third of the non-fat solids in 1942 milk output was fed to animals or wasted; present milling and refining methods waste much of the nutrients to be secured from wheat flour, rice, and corn meal; and most of the peanut and nearly all the cottonseed and soybean crop is used for livestock feed rather than for

CONTENTS

Original Articles	1
Editorial	1
Book Reviews	1
Correspondence	1
Obituary	1
Announcements	1
Index	1

... (The following text is extremely faint and largely illegible due to the quality of the scan. It appears to be a list of contents or a series of short articles, but the specific details cannot be transcribed accurately.)

food. Especially in these crops there is a large nutrient waste through failure to use more of them as food.

9. A U. S. food production program is proposed which would provide nutritionally adequate diet for more than 40 million additional people in 1944 and 1945. The proposed program would involve: a large increase in long staple and a still larger decrease in short staple cotton production, the result being a moderate decrease in total cotton acreage; a moderate decrease in tobacco acreage; maintenance of sugarcane acreage at 1942 levels, with sugarbeets cut one-fourth in irrigated areas and entirely eliminated in non-irrigated areas; considerable increases in Irish and sweet potatoes, dry beans and peas, and the oil crops; sharp reduction of wheat in the east and the Corn Belt, with a large increase in wheat acreage in the Great Plains area; a moderate rise in corn acreage; adjustments in the other feed crops, leaving total acreage about the same; a large increase in total vegetable acreage, plus a broad shift from less nutritious to more nutritious vegetables; the increase of dairy herds and of milk production per animal to the maximum possible degree, and a substantially increased use of milk for food, with dairy cows having first call on feed supplies; the maintenance of beef cattle and sheep at present levels, to use roughage feeds and grazing land which would otherwise be wasted; and a sharp reduction in hogs and poultry, to bring them into line with prospective feed supplies. The reduction in hog and poultry numbers would mean heavy slaughterings and greatly increased supplies in 1943-44, followed by a steep drop in slaughtering and supplies in 1945.
10. The proposed 1944-45 production program would require (given present efficiency levels) 100,000 additional year-round farm workers, plus varying numbers of extra seasonal workers up to 500,000. Some additional machinery, largely in such special types as combines for soybeans and peanut pickers, would be needed. Maximum use of present processing facilities plus some rearrangement should fill most needs except in the case of dry skim milk where considerable increases are needed. Additional processing facilities for concentrated foods for foreign and military use should be provided only after exhausting possibilities for diverting such foods from non-essential civilian uses.
11. Our civilian distribution system must aim to provide enough food for every American to maintain health and vigor and discharge his special duties to the war effort, while realizing that some groups need more food or more of certain foods than the general population. The best method of meeting the differing needs of individuals is probably through group feeding, which would supply extra rations to war workers, school children, and other special groups. At the same time civilian restaurants should be rigidly restricted to moderate-sized portions, and the surrender of ration stamps for restaurant meals should ultimately be required to eliminate this type of unjustified inequality.

12. American civilian food needs should not be considered as left-overs to be satisfied after all other claims are met. The largest single claim on our food supplies, they are in the long run as important as any other, though military and foreign needs should have first call on certain foods or foods in certain forms.
13. The most effective wartime allocation of total United Nations food supplies requires the creation of a food yardstick for various nations and groups within nations, adjusted for traditional differences in amounts and types of food consumed.
14. Military considerations as well as others demand provision for food for reoccupied areas. All interested U. S. government agencies agree that relief for reoccupied areas should be handled by a genuinely international agency; until it is established, U. S. supplies for this purpose should be completely controlled by U. S. food authorities.
15. A thorough food program requires creation of a single contingency reserve to cover unusual and unpredictable demands for the U. S. armed forces, U. S. civilians, and foreign claimants. This alone will permit definite food needs to be estimated with maximum accuracy. A combined contingency reserve operated on sound actuarial principles also provides maximum safety, since it can cover contingencies which no individual reserve could hope to meet.

Part III -- Efficient Food Production, Distribution and Use.

16. Food production today suffers not so much from insufficient labor as from inadequate use of existing labor; migratory farm workers are still not fully utilized. Full employment of these workers, greater mobility of all farm workers through eliminating all restrictions on their movement, and better use of farmers whose farms are too small or too specialized to utilize their labor efficiently should eliminate the need for additional full-time farm workers. Intelligent planning can provide the necessary part-time labor for harvests and other peak seasons by use of school children, foreign workers, the Japanese evacuees, community mobilization, prisoners of war, and other sources.
17. Since agricultural machinery is generally used below capacity, every effort should be made to increase the hours of use per year. There are tremendous potentialities for small farm operators to work part time on larger farms, in return for the use of machinery to speed up work on the smaller farms.
18. Any remaining portions of the adjustment program which tend to freeze existing production patterns, such as in cotton and tobacco, should be eliminated to prepare the way for a positive crop selection program.

19. The greatest obstacle to a realistic war food program is rigid adherence to the parity formula, not because the general farm price level is too high, but because of the relationships between prices which the parity formula maintains. The parity formula must be discarded and replaced by a price structure designed to secure the essential war food production adjustments.
20. Since public policy demands some food expansion where production costs are far above average, the extra cost of making this shift should be considered a public responsibility as much as industrial plant conversions. One approach might be the use of one price for normal production and a higher incentive price for production above the norm.
21. Subsidy payments have definite uses--and distinct limitations--in all-out war food program. Their uses are to hold down general price levels, stimulate production of selected crops, and encourage food movement through legitimate channels.
22. Whenever a serious black market develops in any rationed food, despite aggressive enforcement attempts, considerations should be given to a plan whereby the rationed food in question would be purchased by licensed dealers in the trade, acting as agents for the government and buying for government account. The combined use of subsidies, government title, and constant check on supplies at the farm level appears to be the best positive program to meet the black market threat.
23. Every encouragement should be given to see that regular trade groups carry out the functions of assembling and purchasing the crops to be stimulated under the proposed production program. If this fails, however, the responsibility rests with the government to see that these crops are not wasted.
24. The elimination of cross-hauling and other wasteful transportation practices, which has been outstandingly successful in the case of sugar, should be extended to cover other crops as well.
25. Spreading food supplies evenly from region to region, and over the seasons of the year, requires periodic government intercessions to correct inequalities and forestall shortages. In rationed items, special ear-markings or releases of food to shortage areas will be required; for unrationed foods, informal government agreements with the trade will normally suffice.
26. Under the proposed food program, the only important needs for increased processing facilities are in the cases of dried skim milk and sweetpotatoes.
27. All government food procurement must be undertaken with a careful eye toward its effect on food prices and civilian supplies. Purchases for government account should be concentrated in those areas and seasons when the largest supplies are available, and should include the widest possible variety of foods, types, and qualities.

1. The first part of the report
describes the general situation
of the country and the
state of the economy.
It also mentions the
main problems of the
country.

2. The second part of the report
describes the situation in the
different regions of the country.
It also mentions the
main problems of the
different regions.

3. The third part of the report
describes the situation in the
different sectors of the economy.
It also mentions the
main problems of the
different sectors.

4. The fourth part of the report
describes the situation in the
different social groups of the
country. It also mentions the
main problems of the
different social groups.

5. The fifth part of the report
describes the situation in the
different political groups of the
country. It also mentions the
main problems of the
different political groups.

6. The sixth part of the report
describes the situation in the
different cultural groups of the
country. It also mentions the
main problems of the
different cultural groups.

7. The seventh part of the report
describes the situation in the
different religious groups of the
country. It also mentions the
main problems of the
different religious groups.

8. The eighth part of the report
describes the situation in the
different ethnic groups of the
country. It also mentions the
main problems of the
different ethnic groups.

9. The ninth part of the report
describes the situation in the
different linguistic groups of the
country. It also mentions the
main problems of the
different linguistic groups.

10. The tenth part of the report
describes the situation in the
different geographical groups of the
country. It also mentions the
main problems of the
different geographical groups.

28. The advantages of coordinated government procurement appear well on the way to becoming reality, through concentration of procurement in the hands of the Army and the Food Distribution Administration and the existing cooperation between these two agencies.
29. Rationing of scarce essential foods is the heart of satisfactory civilian food distribution, and successful rationing demands that rations be available and reasonably adequate. But no rationing system can work unless the entire commercial supply of any rationed food moves through regular, legitimate channels.
30. A group of point rationing systems, each covering several foods that are ordinarily substitutes for one another, combines a maximum flexibility with a maximum of administrative control.
31. Ration cards do not guarantee that low-income consumers can afford to buy their legitimate allowance; special efforts are essential to assure that this group gets the nutrients needed to make their best contribution to the war effort.
32. A continuous and vigorous educational campaign is recommended to encourage best use of food in the home; home Victory Gardens and Victory Flocks should not only be encouraged, but all the materials necessary for their success should be made widely available at reasonable prices.
33. The public must be convinced that the sacrifices and inconveniences asked of them by the war food program are necessary to the prosecution of the war. After a decade of food surpluses, many Americans are prone to believe any wild story about the food picture in their resentment over wartime restrictions. These stories and rumors must be met and answered candidly in every forum through which the public can be reached.
34. If the public believes the sacrifices are necessary, it must next be convinced that these sacrifices are being shared equally by all. There is no better method to achieve this than by wiping out obvious inequalities, such as unlimited restaurant meals to which the wealthy have access. Violations of food regulations should be made unprofitable and unnecessary, as far as possible; persistent violators should receive severest punishment.
35. These two keystones of public understanding are not to be achieved merely through diligent official propaganda. The need is not for shiny slogans, but for the government to take the public into its confidence and tell the whole truth promptly and effectively.

FUNDAMENTALS OF A WARTIME FOOD PROGRAM

Report to the Food Advisory Committee
by the
Sub-Committee on United States Food Allocation Policy

I. -- U. S. FOOD IN RELATION TO WORLD SUPPLIES

Why a Food Shortage?

The reasons for the food crisis are many. The initial successes of the Axis powers cut off the United Nations from many important sources of food. Japan's far eastern conquests meant the loss of vast quantities of rice, vegetable oils, and other products which those areas had formerly supplied. Britain is now isolated from some of her most important European sources of vegetables, butter, eggs, cheese, meat, etc. Russia, formerly a nation self-sufficient in food, lost to the invading Axis armies by September 1, 1942, the land which had formerly produced approximately 40% of her bread grains, 85% of her sugarbeets, 43% of her potatoes, 54% of her vegetable oils, 56% of her hogs, 35% of her cattle, and some of her most important sources of fish.

Simultaneously, those countries which ordinarily produced large surpluses of food for export in the past are now using more of their own food, as individual incomes rise. This is true in Australia, New Zealand, in some other United Nations, and particularly in some of the neutral countries. Higher incomes in India and Argentina during 1942 resulted in a net decrease in the quantity of foodstuffs available for export. In these circumstances, the United Nations have not even been holding their own: food stocks have declined steadily to the point where there is no more than a small operating reserve in any commodities except sugar and wheat--and wheat reserves will probably be depleted in the next two or three years at the present consumption rate.

To add to the problems of inadequate supply, the drastic shipping shortage has made most difficult the international distribution of those supplies which did exist. Almost as effectively as the Axis conquests, the lack of shipping cut off normal sources of supply. As long as the rate of sinkings was high, not only were there too few ships to carry available food, but also many food-carrying ships with their entire cargoes were lost.

This situation might ordinarily be met by applying more labor, machinery, fertilizer and other resources to the production of food. Unfortunately, the war-time demands for all of these make it most difficult to do so. The production of munitions and supplies, the armed forces themselves, and the tremendous load on both overseas and internal transportation systems are likewise competing for those same production resources. To the general international shortage of labor and of fertilizer can be added a growing world scarcity of repair parts for farm machinery.

A combination of these factors has caused food exports or even production to decline in some areas. Indian exports of vegetable oils in 1942 were lower than in the year immediately before the war. The 1943 Australian wheat acreage promises to be the lowest in several years, though this is partly compensated for by increases in other crops. The 1943 meat supply is barely sufficient to meet present rations in the United Nations. There is a considerable deficit of the fats and oils usually used for edible purposes. There will not be nearly enough dairy products of all types.

This year and next will bring critically important new demands, which must be met from United Nations resources. Russia will need increasing quantities of food, for the ravages of the invader have been made worse by a serious drouth in the Kuban and other parts of South Russia; the rapidly improving shipping picture makes it possible to increase compensatory imports, but at the cost of a heavier drain on total United Nation supplies. Invasions of the continent will bring into the United Nations world areas which already suffer from Axis pillage, as well as shortages of labor, fertilizer, equipment, etc. Add the wreckage consequent to an invasion, plus the imperative need for food to convert the area into a base for further operations, plus the food needs of the hundreds of thousands of Axis prisoners we have already begun to take, and it is possible to foresee the extra future burdens on the United Nations food resources.

Can U. S. Food Meet the Deficit?

The common impression is that U. S. food can make up the deficit. The fact is that the United States has never been and cannot become the food-basket of the United Nations. For impressive though U. S. food production may be on a per capita basis, it has constituted only a small fraction of total world production and of the total food moving in world trade.

During the years from 1925 to 1929, the principal exporting nations shipped about 6.5 billion pounds of meat per year; U. S. exports in those years were 1.4 billion pounds, or about 21% of the total. During the next five years (1930-34) total world exports declined to 5.6 billion pounds; but U. S. exports declined even more sharply to 950 million pounds-- only 17% of the total. In 1938 the total meat exported by the principal producing countries was still above 5 billion pounds, but U. S. exports had declined to 375 million pounds or less than 8% of the total.

The other two major commodities moving in world trade are wheat and sugar. The total U. S. share of wheat moving in world trade was similar to the percentage for meat. In the case of sugar, prior to the war, the U. S. imported about 3 million tons annually, about one-third of all the sugar moving in international trade.

The United States for decades has produced food mainly for its own domestic needs rather than for export. The nations exporting large portions of their production were Canada, Argentina, Australia, and New Zealand, and the fertile countries and islands of southeastern Asia--not the United States. To be sure,

it is of the gravest importance to increase U. S. food production, to choose better the food to be produced, and to limit U. S. consumption to an essential minimum: this report is designed toward the accomplishment of these ends. But important though American food production may be as a part of the world picture, it should be clearly understood that it cannot alone meet the present and future food needs of the United Nations, or anywhere near it. We simply cannot produce that much food.

The United States occupies a particularly strategic geographic position in the food pattern of the United Nations. Situated between the two major fighting fronts of the war, European and Asiatic, available U. S. food can be used in either theatre with equal facility, up to the limits of our ability to furnish and transport it. However, the immense total quantity necessary to the successful prosecution of the war by all the Allies can only be secured by the planful and systematic use of all the land, labor, and other food production resources available to the United Nations, including colonial and neutral areas.

The role played by the United States so far during the war has been to help make up some of the deficiencies in the food supplies of her Allies, especially the United Kingdom and Russia. The former country has received primarily meat, dairy products, dried fruits, dried eggs, and fats and oils. This has compensated in part for the loss of European sources of these items. A similar list of commodities is being shipped to Russia to make up in part for the loss of production from occupied areas. Some 5 or 6 percent of our production was exported under Lend-Lease in 1942, and the proportion may be doubled in 1943. The importance of this contribution lies not so much in the quantity of food in relation to their total supply as it does in supplementing their supplies with food most needed to bring their diet into balance.

As Axis-occupied areas are liberated, their demands for food must be added. The United States can contribute with moderate amounts of meat, fats and oils, dairy products and legumes needed to supplement the supplies from other sources. This will be a small but highly important part of the total food supply available to those countries.

Obtaining Food from Foreign Sources

There are already examples which show the potential increase in food production to be gained through full use of all the facilities available to the United Nations. In Britain, the area of land in crops and fallow grew from 8.8 million acres in 1939 to 13.7 million acres in 1942, and will probably be increased by another million in 1943. Total food production has grown in Eire, the Middle East, India and the British colonies. In the decade from 1925-35 Eire grew less than 10% of its wheat supply. Since then wheat production there has grown phenomenally, and, if 1943 spring wheat seeding is up to expectations, production this year may be enough to meet all domestic needs.

Equally promising has been the shift in the production pattern. Increased emphasis has everywhere been placed on food production for direct human consumption, rather than feed crops for animals. Especially noteworthy are the gains in production of vegetable proteins and oils. Canada has increased production

The first of these is the fact that the
the second is the fact that the
the third is the fact that the

the fourth is the fact that the
the fifth is the fact that the
the sixth is the fact that the

the seventh is the fact that the
the eighth is the fact that the
the ninth is the fact that the
the tenth is the fact that the

the eleventh is the fact that the
the twelfth is the fact that the
the thirteenth is the fact that the
the fourteenth is the fact that the

the fifteenth is the fact that the
the sixteenth is the fact that the
the seventeenth is the fact that the
the eighteenth is the fact that the

of oil-bearing seeds, as have several Latin American countries; food crops for human use have expanded in the Middle East and Africa; and Ecuador, Peru, and Mexico have expanded rice production to replace Burma and other Far Eastern sources of supply.

The efforts of the Cubans to diversify their agriculture have been greatly stimulated by wartime food needs and the encouragement of the United States. With a sugar surplus in prospect due to the lack of shipping, both Cuban and United States interests were served by increased planting of such crops as beans, corn, and peanuts in Cuba. Offers have been made to buy the entire exportable surplus of these crops at favorable prices, and some U. S. fertilizers, seeds and machinery have been made available in recent months. It is estimated that Cuba can produce in 1943 a surplus of these foods which will contribute materially to the United Nations available supplies.

But these bright spots must be multiplied many times over, if the food needs of the United Nations in the next two years are to be met. Fortunately tremendous possibilities exist both for increasing total production and for shifting resources from the less economical to the more economical crops. The major needs are for edible oils, beans and peas, eggs and dairy products. While some increase in meat production may be possible, crops for direct human consumption should be given preference.

Beans and Peas

One of the most important foodstuff groups now needed in large quantities is dry beans and peas. The difficulties and inefficiencies inherent in the production and transportation of meat are such that in the future the average man must meet a larger part of his protein requirements from vegetable sources (and to a lesser extent, from dairy products). Taken as a whole, beans and peas represent an excellent vegetable source of protein, besides furnishing other essential minerals and vitamins.

Excellent possibilities for increased production of beans and peas exist in Mexico, Argentina, Brazil, French Africa and other areas, but especially in Canada and Chile. In the two last-named countries production actually declined in 1942-43 solely for lack of markets; if this difficulty alone were remedied, substantial production increases would result.

Chile provides a concrete example of possibilities for increasing production of beans and peas. Total Chilean acreage of chickpeas could be tripled, thus providing an export surplus of about 29 million pounds in 1944, as compared with 7 million pounds in 1943. All information points to the existence of suitable land and adequate labor, machinery and storage space for this expansion.

At the same time, 87,000 more acres of dry peas could be planted in Chile than at present. Chile has always been an important producer of dry peas and the cool, moist areas of agricultural Chile are among the few places suited to large-scale immediate expansion in dry pea production. Since 1940, however, Chilean production has declined due to the loss of world markets. All that appears necessary for an 87,000-acre increase is a guaranteed market for Chilean dry

peas; the necessary acreage is available by returning former pea land to pea production and by substituting peas for less essential crops; existing resources of labor, equipment, storage space etc., are adjudged adequate. An increase of 87,000 acres would expand the present 22-million-pound export surplus of dry peas to 88 million pounds.

An even larger simultaneous increase in Chilean bean and lentil production is practicable without interfering with the expansion of pea output proposed above. Tentatively, the acreage goal for dry beans should be about 150,000 acres higher than in recent years. Since bean acreage actually declined by about 50,000 acres between 1934-35 and 1941-42, the extra land should be available through returning former bean land to bean production and by substituting beans for less essential crops both on irrigated and non-irrigated land. Other production factors are capable of handling the proposed expansion. The net result would be an increase in bean production from 88 million to 198 million pounds.

To sum up, Chile is capable of increasing her production of one highly important group of foods, beans and peas, by some 200 million pounds. Yet Chile is only one country, and beans and peas are but one of the foods which the United Nations need badly. Similar achievements are possible in many other allied, friendly or neutral nations.

Edible Oils

Another critical food need is for edible vegetable oils. Yet despite large unsatisfied demand, production has actually declined in some countries since the outbreak of the war. Brazilian exports of oil and oilseeds, with the exception of babassu oil, have dropped off considerably. There are considerable possibilities for production of peanut oil in Brazil, and of linseed and rapeseed in Argentina. It is estimated that some 12,000 tons of palm oil and palm kernels could be secured annually from Liberia by expanding production there. The possibilities for securing additional quantities of beans, peas and edible oils can be duplicated in rice and many other staple commodities in other areas to which the United Nations have access.

Seed

Seed is the mother of food, and no more urgent food need exists today than the need for developing every possible source of seed production. The vegetable seeds are particularly short, both now and well into the predictable future; the demand for seed is great during wartime, when small gardens are encouraged everywhere to help repair other food deficiencies, and it will remain so during the years of rehabilitation, when small-scale vegetable production throughout the liberated areas will be critically needed while the total agricultural machine is being set in motion again.

Present U. S. seed production, which must supply considerable quantities to the United Kingdom as well as to the other United Nations, is not sufficient to meet current demands, much less the needs of the liberated areas both during and after the war. It is clear that development of the necessary kinds and varieties of seeds must be encouraged in every part of the world where the proper condi-

tions exist; and it must be begun at once, for many vegetable seeds (carrots, beets, cabbage, and onion, for example) require two years to grow. Most seeds are so small in weight and bulk that they may be grown in any part of the world and transported by air to areas where they will be used.

Chile, Argentina, Mexico, Brazil and North Africa are very promising seed producers (North Africa was in fact the source of much of Europe's seed). None of these areas are overburdened with war production and all have the labor, the equipment, the appropriate soils, and some experience in seed production. What is needed now is immediate provision of technical assistance, financial aid in some cases, an assured market for the final products and a few mother seeds. But what is perhaps most needed is speed, for unless prompt action is taken an entire growing year may be lost, with the result that new production of biennial seeds would not be available before 1946.

Tapping Foreign Food Resources

There are three major methods, to be used separately or in conjunction with one another as warranted, of getting the potential increases in production of basic foods in various areas of the world. In a large number of cases, the only thing needed is a guarantee to purchase all or any part of the crop at an attractive price set well in advance. This principle is already followed in U. S. food production, and should be spread widely into the foreign fields as well. The second method is to furnish agricultural specialists to assist in the planning, production and processing of the foods we need. Though the supply of agricultural technicians is none too great, the results which can reasonably be expected are more than enough to warrant use of the necessary trained personnel.

The final method is by supplying an essential minimum of the physical requirements for food production--machinery, implements, fertilizer, seed, insecticides, etc. These must all be taken from critically short American supplies, and each individual case demands the most careful scrutiny. But if competent appraisal determines that it is in the national interest of the United States to use a given amount of equipment or fertilizer abroad, whether to produce more or to produce it in more strategic locations, then it should be shipped promptly for foreign use.

Not only does the development of food production in all parts of the non-Axis world contribute to the over-all food position of the United Nations, but it aids greatly the distribution problem, increasingly critical due to lack of shipping. Even where a surplus of one type of food exists in one area, strategic considerations may compel the development of the same food in another area. For example, there is in the United States and Australia today enough wheat to meet the deficit of the Middle East. But since this requirement can be met only by using allied shipping facilities, Middle East wheat production is being encouraged by every possible means.

Other strategic considerations may demand that production of certain foodstuffs be increased even in areas where it is impossible to provide the shipping necessary to move them. Commodities that keep easily, like dry beans and peas, should be grown wherever possible, and if necessary stockpiled against future needs. Shipping should gradually become available to move these foods, both through

increased shipbuilding and diminishing losses; and there should be no doubt that they will be needed in the future, with the growing demands for reoccupation, for the expanding army of Axis prisoners, and post-war rehabilitation.

But what must come first of all is a change of viewpoint. There must be absolutely clear realization that the United States does not have the resources to become the food-basket of the United Nations. Once understood, this clearly points to a world-wide, all-out food production program in every area to which we have access. Our purchasing power, our skill, and where necessary, our scarce production resources must be thrown into the world-wide food production drive. That drive must include every essential food, and it must not be slackened until every essential food requirement of the United Nations and liberated areas is met.

Why Have We Failed?

Up to now, the United States (and Great Britain, to almost the same extent) has been in the strange position of a nation going into a serious food crisis while scarcely lifting a finger to encourage the needed food production in easily accessible foreign areas already possessing adequate land, labor and equipment. Further, we have even allowed food already produced and available to go begging. Why?

Fundamentally there is but a single answer, though it is made of two parts. First, Americans as a whole, including those in government, have never wholeheartedly convinced themselves that we are out of the surplus days of the 20's and 30's. Our governmental machinery for influencing agricultural production was conceived in large part for taking care of unwanted gluts, for keeping prices from sagging to ruinous levels, for encouraging non-food uses of food crops, and for meeting the everyday problems which occur when food becomes a drug on the market.

The second reason for our failure to tap easily available world food sources derives from the first: as long as we remain convinced that the United States can produce all the food that we or anyone else needs, then we are unlikely to give complete governmental authority to a single man (or agency) to develop world food resources as a part of an entire war food plan. So a complex maze of committees, agencies, directives, suggestions, cross-purposes, jealousies, etc., has developed that makes one wonder how any foreign food resources ever have been or ever will be developed at the instigation of this government.

The remedies are simple to prescribe, though not so simple to put into effect. The surplus cobwebs have got to be brushed from many an official brain on the subject of food, and in place of the easy assumption that we always will have more food than we know what to do with must come the painful realization that our food supplies are low today and will remain so until at least two or three years after the end of the war. And that is the best we can hope for: with bungling and mishandling, whether in the operation of our domestic or foreign food program, we could easily sink to the level of downright hunger.

1. The first part of the report is devoted to a general survey of the situation in the country.

2. The second part of the report is devoted to a detailed analysis of the economic situation in the country.

3. The third part of the report is devoted to a detailed analysis of the social situation in the country.

4. The fourth part of the report is devoted to a detailed analysis of the political situation in the country.

5. The fifth part of the report is devoted to a detailed analysis of the cultural situation in the country.

6. The sixth part of the report is devoted to a detailed analysis of the international situation in the country.

7. The seventh part of the report is devoted to a detailed analysis of the military situation in the country.

8. The eighth part of the report is devoted to a detailed analysis of the diplomatic situation in the country.

9. The ninth part of the report is devoted to a detailed analysis of the judicial situation in the country.

10. The tenth part of the report is devoted to a detailed analysis of the administrative situation in the country.

Once the enormity of the need is understood, some agency must receive the clear responsibility for the broad development of food resources beyond the borders of the United States. This responsibility must not be niggardly or haggling: it is worthless to prate of foreign development but insist that it cost nothing in the way of technical help, machinery or money, and that it shall not interfere with some piddling export market for food five or ten years after the war. The authority must be broad and simple. In effect, it must say that here are the foods which are in short supply today, and here is the seed, the technical assistance, the machinery, etc., that can be devoted to foreign food development. Under these conditions, the only limits to the amount of food desired should be the entire food needs of the United Nations.

A United Nations Food Program

The major responsibility for an international food development program to meet the needs of the United Nations falls upon Britain and the United States; for they have the easiest access to the most promising areas, plus the greatest supply of technical experts, fertilizer, seed, machinery and the other necessary production components. But just because the program is designed to meet United Nations needs, and not British or American needs, the urgent necessity will soon be felt to weld together an appropriate United Nations body to deal with food questions of common concern to all.

This does not at all excuse the United States from the responsibility for launching a vigorous development program in every area to which it has easy access: procrastination and lethargy cannot be pardoned because they are allegedly due to the desire to develop a "long-range", "all-inclusive" program. A partial success due to our own vigorous initiative is the best encouragement to the Allies to join us in a global development plan where the resources of all could be used to best advantage.

It is devoutly to be hoped that a joint food body (composed of Britain, Russia, and the United States as a beginning) would have at least the power to assign areas, allocate production resources, and set goals which might reasonably be expected from each area. It is not difficult to anticipate that such a body could soon secure the participation of other nations as well, and could be of enormous practical value in the post-war period.

II. - MEETING ESSENTIAL FOOD NEEDS

Our food resources must, like all other American resources, make the greatest contribution to the war effort. To make this contribution, they must meet the most essential food needs with the highest possible degree of technical efficiency. What food needs are most essential is discussed below; how to meet them most efficiently will be considered later.

Meeting our most essential food needs involves two things: producing the right crops and livestock products to meet those needs; and distributing the food so that the most basic needs of all the people are satisfied.

How great are the rewards of a realistic system of war-time food production and distribution can be seen from the British example. Though importing a smaller percentage as well as a smaller total volume of food than before the war, Britain has today a better balanced diet for most of her people than at any time in her history. Her total land in crops and fallow increased from about 8,800,000 acres in 1939 to nearly 14,000,000 in 1942; during the same period her total tonnage of crops and hay grew from 55,000,000 to 74,000,000.

But the most startling British accomplishments have been in food use and distribution. Traditionally a country of strong food preferences the war years have effected striking changes in food habits. The compulsory use of high-extraction (85%) flour for all bread, as compared to the 65% to 70% extraction flour common in the United States, has not only resulted in a sizeable increase in the total nutrients available from breadstuffs, but also has reduced by approximately one million tons the shipping necessary for one year's food supply. This represents a loss of the same amount of animal feed, it is true; but the nutrients gained by direct human consumption are several times as great. More milk is used in its most efficient nutritive form, as whole milk. The quantity of Irish potatoes consumed by British civilians is literally staggering to an American--an estimated 250 lbs. per person in 1943, compared with 137 lbs. of both Irish and sweet potatoes for American civilians.

Hand in hand with these changed eating habits has come a distribution system which prevents low-income consumers falling much below the national average. An extensive rationing system plus rigorous price control assures that the general food supply will be fairly distributed at prices that the people can afford to pay. Further a nation-wide chain of factory and school canteens plus the government-operated British Restaurants makes extra food available at nominal prices to children, war workers, and other groups with special needs (by mid-1942 factory canteens alone in Britain were serving 43 million meals weekly). Recent surveys of thousands of British families in low-income areas have failed to discover cases of malnutrition outside of institutions.

Because of an efficient distribution system, British low-income consumers are nearly as well fed as the rest of the population, and far better fed than many American low-income groups. True, the British have had to forego some foods that they like, and their diet has been called monotonous. But as for nutritional essentials, Britain's war food program has made her better fed than at any time in her history.

Fundamental Objectives

To parallel the accomplishments of the British food program means first re-evaluating the American food scene in terms of essentials. The main purpose of food is nutrition. This is supplied through the principal nutrient elements--proteins, fats, calories, certain minerals (principally iron and calcium), and vitamins (Vitamin A, thiamine, riboflavin, niacin, ascorbic acid and Vitamin D).

The various proteins differ in nutritional value; certain kinds perform specific functions, and all generally supplement each other. About one-third of the protein should be of animal origin--meat, fish, milk, and eggs. Both proteins and fats help supply calories (energy), but some of each is necessary for other reasons.

While the need for fats is not so thoroughly known as for proteins, there is definitely a minimum requirement. A concentrated source of energy like fats helps reduce the need to eat large quantities of food; Britain found that manual workers simply would not eat the increased amounts of cereals and vegetables to supply needed energy when fat and meat rations were low. Fats also delay the pangs of hunger by remaining in the stomach longer than other foods. The balance of needed energy above that supplied by proteins and fats is provided by the carbohydrates, while the various minerals and vitamins meet other essential though often over-publicized needs.

The National Research Council (through its Food and Nutrition Board) has established recommended allowances for the more important nutrients listed above. While the needs, of course, vary with age, sex, size, and activity, these daily allowances are generally accepted for a "moderately active" man of average size:

Calories	3000
Protein	70 grams
Calcium	0.8 grams
Iron	12 milligrams
Vitamin A	5000 international units
Thiamine (B ₁)	1.8 milligrams
Riboflavin (B ₂)	2.7 milligrams
Niacin	18 milligrams
Ascorbic acid	75 milligrams
Vitamin D	Generally supplied by sunshine

Providing the Basic Nutrients

Many different foods contain one or several of the basic nutrients; animal proteins, for example, may be supplied by meat, fish, eggs, or milk, while butter, lard and vegetable oils are common sources of fat. Thus there is a wide variety of sources from which the essential food needs can be met. A sound war-time food program should not begin by setting goals for various kinds of food products, but rather should aim at providing the various food nutrients most economically in a diet that is not too bulky or otherwise unduly difficult to eat. The possibility of substitution, of filling the essential nutrient needs from many different food sources, is the mightiest weapon in the food arsenal.

The "average" diet is like the mythical "average family" of $3\frac{1}{2}$ persons--it never actually exists. Real diets vary greatly from nation to nation; from region to region in the same country; from one income group to another. What an individual eats is decided by a number of things--tradition, his tastes, his pocketbook, what foods are available. All these factors produce solidly established food habits, which change only under strong pressure. For all her excellent food program, Britain still uses precious resources at home and even more precious shipping to provide meat proteins at levels well above those necessary for health and vigor; the established food patterns have prevented more rapid change. Sudden shifts in the kinds of foods available may often bring "voluntary malnutrition" because of failure, through ignorance or dislike, to eat the new foods in place of the old ones. Drastic diet shifts may even be physically harmful because the system has long been adjusted to another diet.

These are not absolute barriers, but challenges. The basic war need is still for nutrients, not taste gratification. When food production competes with tank and plane production for critical resources, the war food program calls for every ounce of ingenuity and foresight in showing the public how to accept the new and more economical nutrients in place of the old.

Special Needs

Certain groups of food users have very specific and rigid requirements as to the foods they need and in what form they need them. Soldiers in the fighting zones, for example, or sailors on board ship must have highly concentrated foods that keep well and can be shipped economically. Canned meats and fish, dehydrated fruits and vegetables, and powdered milk are especially suitable for these uses. Parcels for prisoners of war must also be made up of these compact, concentrated, non-perishable items. The drastic shortage of shipping points toward the wide use of these foods also for foreign consumption. Russia requires large quantities of concentrated energy foods such as fats and oils, which effectively supplement her own domestic diet from primarily vegetable sources. The substantial saving in shipping tonnage can be seen from the fact that dehydrated vegetables, for example, generally weigh only one-fourth to one-tenth as much as fresh ones.

In filling these special needs it is most difficult to substitute one food for another. Therefore, military and foreign requirements should always receive first preference in the types of foods most suitable for their use. U. S. civilian consumers, on the other hand, are close to their source of supply and can eat many different foods in many forms. Therefore, the widest opportunity for effective substitution lies in U. S. domestic consumption.

What is America's Food Production Capacity?

The opinion has often been expressed that American agriculture has never reached anything like its potential capacity. Over a period of many years, this might be true--if we were able to add millions of new workers and unlimited machinery, and undertake vast irrigation, reclamation, and fertilization projects. Even under these conditions, however, there would still be

2000 年 12 月 20 日
 2000 年 12 月 20 日
 2000 年 12 月 20 日

[illegible]

the need for time--time to manufacture new machinery, time to reclaim, irrigate, or bring into cultivation unused land, time to increase flocks and herds.

But the need for food is immediate, and in war-time America in 1943 the above possibilities exist only within severe limits. Therefore, it is essential to choose carefully those means for increasing agricultural production which would give greatest economy to greatest immediate results. When one more tractor means one less anti-aircraft gun, miscalculation is dangerous.

The basic raw material of agriculture is land, and the oldest method of increasing output is to plant more acres. In a few cases this may be feasible in war-time America; selected irrigation projects may increase productivity greatly with little increase in labor, machinery, etc., while some areas have enough labor to consider bringing new land into cultivation. But the best of American land is already in use, and any really substantial addition is unlikely to increase our production proportionate to the increase in acreage. Cultivating a larger acreage also frequently entails more farm machinery, tools, equipment, etc., all most difficult to provide today. The implement factories of yesterday are now turning out the weapons of war, on which the nation's very existence depends. These military pressures and needs limit the amounts of additional equipment that can be provided.

Increasing the total land under cultivation would also involve additional farm labor. Despite serious charges that the drafting of farm labor threatens to wreck the food production program, the total number of farm workers has declined little since 1940 (about 183,000 in two years, according to the Bureau of Agricultural Economics). With the small decrease in quantity, however, has come a somewhat larger decline in quality, due to a drop of nearly 500,000 between 1941 and 1942 in the number of male farm workers between 18 and 44. Those left on the farms, including many who were not farm workers before the war, undoubtedly worked much harder in handling the record harvest of 1942.

Though Selective Service policy and other restrictions on the movement of farm workers will help prevent further loss of agricultural labor, can any considerable increase in total agricultural manpower be justified? The need for war production workers, but most of all the steady drain of about 400,000 able-bodied men a month into the armed forces, will bring America face to face with a total manpower shortage in the fall of 1943. More year-round farm workers can be provided only by taking them from other pursuits. A thorough community mobilization program can provide large amounts of additional labor for the harvest and other peak periods, as urgently recommended below. But that will not meet the needs for additional year-round agricultural labor essential to any major increase in the total land under cultivation.

Better Use of Present Resources

With labor and equipment likely to be limited, careful and continuous attention must be given to the possibility of increasing total farm output through better use of the land, labor, and equipment now available. The use of better varieties, better cultural practices, better livestock and feeding care, and better crop rotations and farm organization, holds many possibilities for increasing production. Governmental assistance to agriculture has always

1. The first part of the report...

2. The second part of the report...

3. The third part of the report...

4. The fourth part of the report...

5. The fifth part of the report...

6. The sixth part of the report...

7. The seventh part of the report...

8. The eighth part of the report...

9. The ninth part of the report...

10. The tenth part of the report...

11. The eleventh part of the report...

12. The twelfth part of the report...

13. The thirteenth part of the report...

14. The fourteenth part of the report...

15. The fifteenth part of the report...

16. The sixteenth part of the report...

17. The seventeenth part of the report...

18. The eighteenth part of the report...

19. The nineteenth part of the report...

20. The twentieth part of the report...

21. The twenty-first part of the report...

22. The twenty-second part of the report...

23. The twenty-third part of the report...

24. The twenty-fourth part of the report...

25. The twenty-fifth part of the report...

26. The twenty-sixth part of the report...

27. The twenty-seventh part of the report...

28. The twenty-eighth part of the report...

29. The twenty-ninth part of the report...

30. The thirtieth part of the report...

31. The thirty-first part of the report...

32. The thirty-second part of the report...

33. The thirty-third part of the report...

34. The thirty-fourth part of the report...

35. The thirty-fifth part of the report...

36. The thirty-sixth part of the report...

37. The thirty-seventh part of the report...

38. The thirty-eighth part of the report...

39. The thirty-ninth part of the report...

40. The fortieth part of the report...

41. The forty-first part of the report...

42. The forty-second part of the report...

43. The forty-third part of the report...

44. The forty-fourth part of the report...

45. The forty-fifth part of the report...

46. The forty-sixth part of the report...

47. The forty-seventh part of the report...

48. The forty-eighth part of the report...

49. The forty-ninth part of the report...

50. The fiftieth part of the report...

51. The fifty-first part of the report...

52. The fifty-second part of the report...

53. The fifty-third part of the report...

54. The fifty-fourth part of the report...

concentrated on these problems, and the steady progress of decades can be speeded up in war-time through more thorough guidance, appeals to patriotism and income incentives.

The greatest opportunity for more efficient production in American agriculture is the small and medium-sized farm whose resources are partially wasted for lack of credit and good management. The potentialities of this group of farms were graphically demonstrated in 1942 by the 464,000 families who received credit and technical assistance from the Federal Government: they increased their milk production 20% over 1941, their pork production 36%, their peanut production 88%, and their dry bean production 24%. These families have less than 8% of the nation's farms; yet their increased production in 1942 accounted for 38% of the nation's increase in milk production; 5% of the increase for pork 10% of the increase for peanuts, and 17% of the increase for dry beans. There were also important increases in the production of other "war crops" and livestock products on these farms. While the increases per farm were small, and not all of them entered commercial channels, they are still significant in the aggregate.

Another 750,000 small and medium farms are in this reservoir, waiting to be tapped through provision of credit and farm management supervision. While better farm practices are urgently needed throughout American agriculture, this particular group of farms offers the best opportunity for an important increase in production with the least need for additional critical materials and resources.

In some regions of the country, farm labor is not fully used because of unproductive land and farms too small in size. These farm families in some instances can supply labor to other farms, or have their small holdings consolidated into larger farms capable of better management and more efficient operations. Some progress has been made especially in the Appalachian area toward recruiting poorly utilized labor for productive employment in other regions.

In contrast to the small farms where labor is not fully employed because of lack of other resources, there are larger farms on which the labor supply is insufficient to use all of the land and equipment effectively. Wherever workers could produce more by moving from small farms where they are inefficiently employed to larger farms, such movement should take place, either for year around or part-time employment.

Better Choice of Crops and Livestock Enterprises

Increasing total production is important to a realistic war food program, but much more impressive and immediate results are possible through better choice of crops on which to spend our available resources of land, labor, and equipment. For tremendous increases in total nutrient production can be made through shifting resources from certain crops and livestock enterprises to others.

For example, labor spent on dry edible peas will yield 31 times as much protein as in producing milk, 47 times as much as pork, and 60 times as much as beef. Peas will also yield more carbohydrates and essential vitamins and minerals than any of the livestock enterprises. In addition, peas produce more per acre of most nutrients than feed crops fed to livestock.

THE UNIVERSITY OF CHICAGO
DIVISION OF THE PHYSICAL SCIENCES
DEPARTMENT OF PHYSICS

REPORT OF THE
COMMISSIONERS OF THE
BOARD OF PHYSICS
FOR THE YEAR 1900-1901
PUBLISHED BY THE
UNIVERSITY OF CHICAGO
PRESS

CHICAGO, ILL., 1901
PRINTED BY THE UNIVERSITY OF CHICAGO PRESS

THE UNIVERSITY OF CHICAGO
DIVISION OF THE PHYSICAL SCIENCES
DEPARTMENT OF PHYSICS
REPORT OF THE
COMMISSIONERS OF THE
BOARD OF PHYSICS
FOR THE YEAR 1900-1901
PUBLISHED BY THE
UNIVERSITY OF CHICAGO
PRESS

CHICAGO, ILL., 1901

THE UNIVERSITY OF CHICAGO
DIVISION OF THE PHYSICAL SCIENCES
DEPARTMENT OF PHYSICS
REPORT OF THE
COMMISSIONERS OF THE
BOARD OF PHYSICS
FOR THE YEAR 1900-1901
PUBLISHED BY THE
UNIVERSITY OF CHICAGO
PRESS

CHICAGO, ILL., 1901
PRINTED BY THE UNIVERSITY OF CHICAGO PRESS

Peanuts, dry edible beans, and soybeans are likewise efficient in producing nutrients per unit of resources. Grain crops eaten by humans provide much more nutrients, especially calories and proteins, than the same grain used as feed crops for livestock. Irish and sweet potatoes are excellent sources of calories and some vitamins, although the high water content of potatoes makes them less economical for long-distance shipment than cereals and dry beans and peas.

Nearly 200 million bushels of grain and over 300,000 tons of protein supplement were fed to beef cattle in the Corn Belt in 1942. An acre of soybeans produces about 20 times as much protein and nearly 10 times as much fat, while requiring only half as much labor as an acre producing corn which is fed to cattle. These figures do not take into account the labor needed to tend cattle nor the extra roughage feeds required. Many vegetables and fruits are also efficient producers of certain minerals and vitamins, and certain shifts between different vegetables would result in increased nutrient production.

As a general rule, crops which can be consumed directly by humans are more efficient producers of nutrients, for the resources employed, than livestock enterprises. We need certain amounts of proteins of animal origin; however, present consumption of animal proteins is far higher than is necessary for health, and in addition some livestock enterprises are more efficient in producing the needed nutrients than others. Therefore large savings are possible both by cutting the total amounts of animal proteins, while at the same time shifting resources from those livestock enterprises which are less efficient producers of nutrients to those which are more efficient. Except in remote areas, it is much more efficient to use whole milk for human consumption than to make butter or cheese and feed the remaining buttermilk, skim milk, or whey to livestock. A considerable shift from meat to dairy products and a much broader use of milk and milk products for food rather than animal feed is possible over the period of a year with proper incentives. Dairy output can only be expanded by a small percentage in the next two years, but dairy products are such an important part of the total food supply that even a small percentage increase can be of tremendous importance.

There are, of course, many limitations which make it impossible to shift all our land and resources from one crop to another at will. Some land is suited only to certain crops, and unless planted in those crops is practically wasted. Frequently a single farm needs a number of complementary crops and livestock enterprises, each using the products or by-products of the others, in order to achieve overall efficiency. Rotation plans may require one crop to follow another even though it is not badly needed in a war food program. Biological factors limit the speed with which changes can be made between livestock enterprises; since it takes two years for dairy heifers to come of producing age, heifers saved this spring will not come into production until late in 1945.

Nevertheless, considerable shifts are still feasible over a one or two-year period. Most of the shifts recommended above could be made in 1944, some not until 1945, if they were planned promptly and resolutely and put into effect at once. However, it is unlikely that we shall get them so long as present price relationships encourage many of the less efficient nutrient producers and discourage the more efficient ones. It is essential to adjust prices and provide other incentives as well, if we expect to stimulate the desired changes.

Better Use of Food

Yet a third substantial increase in our total supply of nutrients is possible through better use of the crops we now produce. This is especially true in the case of milk, cereals, soybeans, peanuts, and cottonseed meal.

Our milk resources do not furnish the amounts of nutrients they should. The estimated 1942 production of milk was 119 billion pounds; but the non-fat solids (primarily skim milk after separation of the cream) from an estimated 51 billion pounds were either fed to livestock, or used for industrial purposes, or wasted entirely. These non-fat solids contain large amounts of essential proteins found in few other foods, in addition to being one of the best sources of calcium and riboflavin.

Another waste occurs in the manufacture of cheese. More than one-fourth of the calcium, about one-third of the protein and phosphorus, half the iron, three-fourths to seven-eighths of the riboflavin, niacin, and thiamine, and nearly all the lactose (milk sugar) are lost into the whey which is usually discarded or fed to animals.

A large part of these nutrients can and should be saved for human consumption as whole fluid milk, evaporated and condensed milk, dried skim milk, and dried whey, so that only 22 billion pounds of skim milk and buttermilk are retained on farms instead of 31 billion. This 22 billion pounds would be more than sufficient to meet the special needs for milk to feed to young dairy calves. The nutrient gains which can be made by human consumption of milk instead of feeding it to livestock are considerable: only about 20% of the nutrients in milk fed to hogs and beef cattle are returned in the form of meat.

To cut nutrient losses in cheese production, a sound war food policy would include the establishment of whey drying facilities, whose output could be used in bakery products, baby foods, and other forms. Cheese production should be encouraged mainly in areas where the whey can be thus salvaged for human consumption.

The cereals, besides being excellent sources of calories, protein, iron and thiamine, are especially inexpensive in terms of the resources needed to produce, distribute, and store them. As in the case of milk, more nutrients can be secured from the grains by using them for human consumption than by feeding them to livestock. Wheat eaten as whole-wheat flour yields 27% more thiamine, more than twice as much niacin, nearly three times as much energy and riboflavin, four times as much protein, eight times as much iron and twenty times more calcium than the same amount of land used to produce feed for hogs.

Another large gain in total nutrients is possible through using cereal products in slightly different forms. The highest extraction (72%) white flour in common use in the United States today loses over a third of the protein and from three-fourths to four-fifths of the calcium, iron, thiamine, riboflavin, and niacin contained in the whole wheat. Much of this loss could be salvaged through use of the 85% extraction flour common in Britain today. Similar gains can be made by using unpolished rice and whole-grain cornmeal.

The oil crops--peanuts, soybeans, and cottonseed--offer another large potential increase in nutrients. Common practice today is to extract the oil from these crops for food use, and feed the remaining meal to livestock. However, there are several ways of using the entire product for human consumption. Peanuts can be eaten as peanut butter; both peanuts and soybeans can be eaten whole, after suitable cooking; and all three crops can be converted into flour for human use, after the oil is pressed, instead of being made into livestock meal.

Substantial increases in total nutrients result from using these crops for food instead of livestock feed. Soybean meal fed to dairy cows produces certain nutrients in the form of milk; but the same amount of soy flour for human consumption will furnish:

- 11 times the protein
- 2 times the calcium
- 6 times the phosphorous
- 47 times the iron
- 23 times the thiamine
- 2 times the riboflavin
- 5 times the niacin
- Slightly less Vitamin A

Peanuts show a similar picture. If peanuts are eaten whole or as peanut butter, instead of extracting the oil and feeding the remaining meal to dairy cattle, the total nutrient yields are:

- 11 times the protein
- 6 times the phosphorous
- 14 times the iron
- 12 times the thiamine
- 3 times the riboflavin
- 27 times the niacin
- Slightly more fat
- 90% as much calcium

Peanut and cottonseed flour are also rich sources of essential nutrients, cottonseed flour being especially high in thiamine and riboflavin. A blend of about 10% of these flours with wheat flour produces a balanced protein which compares favorably with animal protein. Their expanding use in bread, as well as in meats, cereals, and dry soup powders, will probably call for a further expansion of facilities for processing these flours.

The Broad Program

A realistic wartime food production program must, therefore, base itself on the following factors. First, our total nutrients could be greatly increased by shifting to those crops and enterprises which are more efficient as nutrient producers, since the nutritional needs, especially for the civilian population can be met through many different combinations of foods. Second, better use of our present resources of land, labor, and equipment, especially in the smaller and medium farms, would bring a considerable increase in total food production. And third, a large gain in total nutrients is possible through using more of our crops for food rather than for feeding livestock and other subsidiary purposes.

If we make all these indicated steps toward better selection, better production, and better use of our food resources, the next question is, Will it meet our expanding needs in 1944 and 1945? An attempt has been made to answer this question graphically in the three charts which follow.

Food Requirements for 1944 and 1945

Chart I depicts the first element of the answer, namely, what our essential domestic and foreign food needs will be in those years. The solid left-hand portion of each bar represents U. S. civilian needs, based on an adequate per capita diet designed for maximum use of the more economical foods. This diet, which takes into account the differences between the various age, activity, and sex groups, meets the recommended nutrient allowances of the National Research Council, and is, in fact, a better diet than the majority of our people has ever had. At the same time it would be more economical to produce, since it would contain considerably less meat, fats, oils, and sugar, but more cereals, beans, peas and potatoes. Dairy products and leafy green and yellow vegetables would also be considerably increased: though not among the cheaper foods, they are the cheapest source of certain essential nutrients. While nutritionally superior, such a diet would depart from existing habits and tastes. However, the changes are not severe, and they are certainly the best way of making our food supplies go further.

In a country as large as the United States, it is quite impossible to get absolutely even distribution of food supplies, even in wartime. Therefore an allowance of 5% was made in Chart I for unequal distribution--an allowance so small, in view of previous inequalities, that distribution must be considerably improved if it is to be enough.

The shaded right-hand portion of each bar in Chart I represents total non-civilian needs, including the armed forces, Lend-Lease, foreign, relief, etc. Figures on those needs were supplied in some cases by the armed services or foreign governments; estimates were made where they were not. It is worth noting that estimated requirements are higher for 1944 than for 1945. This is based on two assumptions: that requirements for reoccupied areas are expected to reach their peak next year; and that the building of stocks for military use is likely to decline toward the end of 1944. Large increases in available shipping, or reopening of communications with China and other areas could increase this group of requirements many fold.

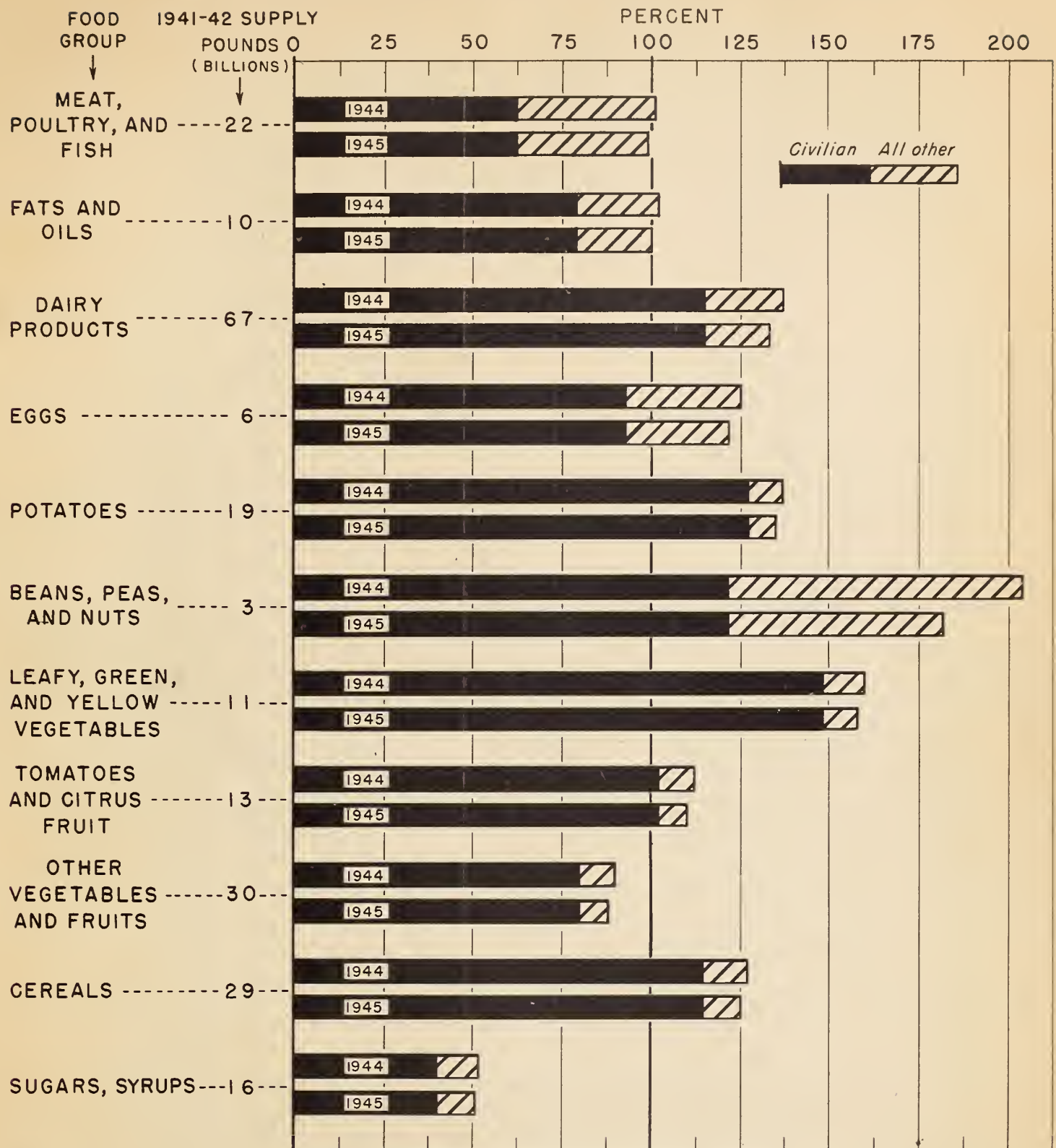
Potential 1944-45 Production

The production which can be balanced against these requirements is given in Chart II, which estimates potential 1944 and 1945 production of the various food groups in a combination designed to furnish the most nutrients. The increases in Chart II are of two types--those due to larger total production, and those which stem from wider use of present crops for food. For instance, while there would be only a 4% increase in milk production in 1944 and 6% in 1945, a great deal more milk would be used for food and less for livestock feed and other purposes.

[The text in this block is extremely faint and illegible. It appears to be a multi-paragraph document, possibly a letter or a report, written in a cursive or semi-cursive hand. The ink is very light, and the paper shows signs of age and wear.]

FOOD NEEDS IN 1944 AND 1945

FROM UNITED STATES SOURCES AS PERCENTAGE OF 1941-42 SUPPLIES*



* AVERAGE FOR CALENDAR YEARS 1941 AND 1942

United States civilian food needs are estimated on the basis of a diet making increased use of the foods which are economical sources of nutrients. All other needs include those of United States military services and the needs of all other nations and United States territories and possessions from the United States. Average supplies in 1941 and 1942 include domestic civilian consumption, military use and exports.

The major production increases indicated in Chart II are for potatoes, dry edible beans and peas, peanuts and leafy green and yellow vegetables (in the latter case supplemented by the extensive Victory Garden program). Milk production would increase over both years, but marketings of meat would reach a peak in the winter of 1943-44 and decline sharply in 1945. This is due to the need for reducing the numbers of hogs and poultry to levels consistent with future feed supplies. Therefore heavy slaughterings would take place in 1943 and 1944 in carrying out this reduction. The lard from heavy hog marketings in 1943-44 would substantially increase fat supplies for 1944; by 1945 increases in the oil crops would help replace the lard lost through declining hog marketings.

Production Compared with Requirements

Chart III serves to combine Chart I and II, by comparing our total potential production in 1944 and 1945 with the demands that will be made on our food supply. The parallel bars over each food group represent our possible 1944 and 1945 production, and whether they extend above or fall short of the horizontal line indicates the surplus or deficit in that particular food group. This might be considered a trial balance, to be followed by further minor adjustments to bring about a better balance between production and requirements.

The deficits apparent from Chart III are in dairy products, sugar, and other vegetables and fruits. The deficit in sugar is normal, and can only be met by imports as in the past. The slight deficit in dairy products in 1944 can be made up by the extra meat supplies available in that year; by 1945 the increase in dairy output would make up the deficit entirely. The deficit in the "other vegetables and fruit" category is due to a shift to leafy green and yellow vegetables. Because of their Vitamin A content the leafy green and yellow vegetables are nutritionally superior to the "other vegetables and fruit". Hence the excess of leafy green and yellow vegetables makes up the deficit in the other category. Another alternative might be to shift production in this direction only far enough to meet requirements for leafy green and yellow vegetables. This latter alternative has the advantage that it would involve less change in consumer habits. The other large excess over requirements is in fats and oils. The alternatives are to reduce production or liberalize domestic and/or foreign allowances. The second alternative may be preferable, since it would still involve a reduction from current levels of consumption.

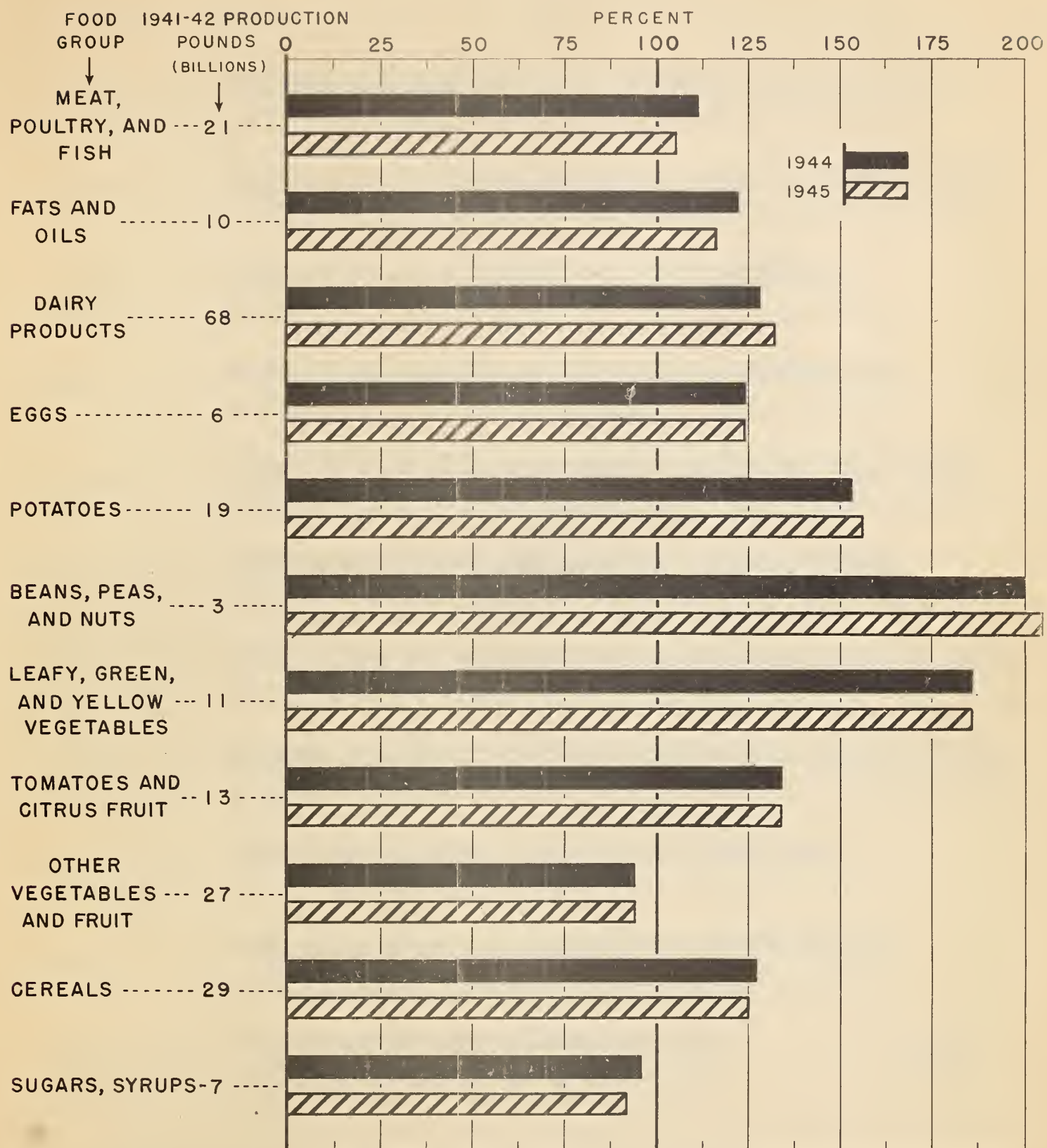
The most significant tendency revealed by Chart III is that 1944 is likely to be our most critical food year, since estimated peak requirements will be reached before the peak in production. Furthermore, 1944 supplies are partly dependent on 1943 production. The 1944 pinch will be somewhat relieved, however, by heavy marketings of hogs and poultry incident to the sharp decrease in livestock numbers in that year.

The production adjustment program described above is based on more careful choice of what crops to grow, better use of our production resources in growing them, and better use of the food thus produced. This three-fold program represents a difficult and serious shift in food production techniques, and would not be worth undertaking unless it promised a substantial increase in total nutrients. What, then, would be the gain in nutrients, expressed in terms of additional people who could be fed?

Chart 2

MAXIMUM UNITED STATES FOOD PRODUCTION IN 1944 AND 1945

AS PERCENTAGE OF 1941-42 PRODUCTION*



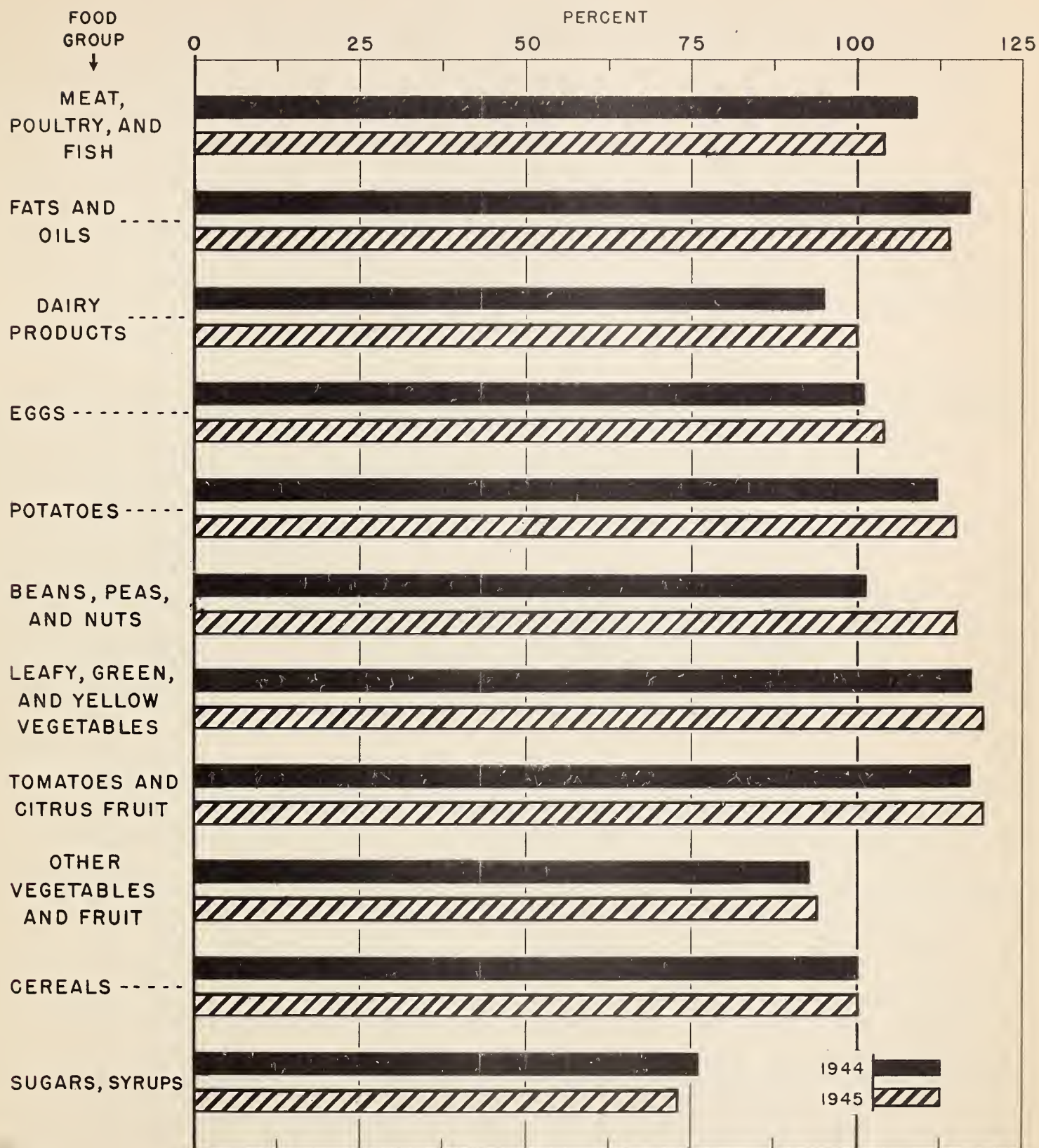
* AVERAGE FOR CALENDAR YEARS 1941 AND 1942

Production estimates are maximum feasible according to the indicated pattern with normal weather conditions and fully adequate measures to encourage production. They are not forecasts. Increased food use of products, such as cereals, is included.

JULY 2, 1943

Chart 3

MAXIMUM UNITED STATES FOOD PRODUCTION IN 1944 AND 1945 AS PERCENTAGE OF NEEDS



Based on charts 1 and 2. Production estimates assume fully adequate measures to encourage production. Imports not included.

JULY 2, 1943

Except for a minor deficiency in riboflavin, this program would provide all the food for a nutritionally adequate diet for more than 40 million extra people in 1944 and in 1945. The figures for some individual nutrients are even more impressive--enough protein for 60 million extra mouths in 1944 and 1945; enough calcium for 50 million extra in 1944 and 55 million in 1945; iron for 70 million extra in 1944 and 65 million extra in 1945; plus similar increases for most of the essential vitamins. These figures are based on a completely adequate diet. For an emergency diet, the extra food possible through the proposed food program would entirely provide for more than 60 million people in 1944. Complete achievement of the goal would enable us to improve the general civilian diet, increase total shipments to our Allies, provide for our expanding armed services, and provide substantial amounts of food for reoccupied areas--all at the same time.

When nutrient increases of such size are possible, no effort is too great to carry out the program which can provide them. In the large, they would enable us not only to meet the increasing food needs of the war, but at the same time open the vista of making American nutritionally sounder and healthier than at any time in our history.

The Picture Crop by Crop.

This attractive picture when translated into hard reality means sweeping changes in what crops are being planted and where they are being grown. The changes necessary to accomplish the food program just outlined are given below, crop by crop.

Cotton

The proposed 1944 and 1945 war food program would result in a moderate decrease in total cotton acreage. However, within the various types of cotton much larger shifts would take place. The millions of bales of cotton currently on hand in storage warehouses are the short staple variety almost exclusively, while the major war need is for the long staple varieties. On the other hand, on some land cotton is the best food crop that can be grown. The balancing of these various factors leads to the following conclusions. First the Mississippi delta and similar areas which can grow cotton of inch staple or over should concentrate on long staple cotton to the exclusion of everything else. In the delta, the cottonseed by-product is a better oil producer than any other alternative crop. Second, except in those areas where no satisfactory alternate crop such as peanuts or soy beans can be grown, all short staple cotton production should be discouraged and if possible eliminated entirely. Taken as a whole, this would mean cutting total cotton acreage from 23,302,000 in 1942 down to 20,500,000 acres in 1944 and still further to 19,500,000 in 1945. It also envisages using up our present stocks of short staple cotton by some time in 1946. In the meantime a reduction in the civilian use of cotton goods of perhaps 25-30% is likely in any case, due solely to the fact that cotton mill capacity cannot meet present military requirements as well as current civilian consumption levels.

Tobacco

Tobacco does not use a large acreage, but it does require substantial amounts of labor and fertilizer. The proposed food program is based on a reduction of tobacco land from 1,380,000 acres in 1942 to 1,200,000 acres in 1944 and 1,150,000 in 1945. This would make necessary a reduction of about 30% in domestic consumption or possibly a smaller reduction if exports were cut sharply.

Sugar Beets and Sugarcane

Sugarcane would be held at approximately the 1942 acreage; sugar beets would be cut 25% in irrigated areas, and completely eliminated in non-irrigated areas. This means a cut in sugar beet acreage from 1,049,000 acres in 1942 down to 600,000 acres in 1944 and 465,000 in 1945. It is assumed that the resulting sugar deficit can be met by larger imports plus slightly tighter rationing controls, and some further reduction in non-essential uses, such as beverages.

Potatoes

The acreage of Irish potatoes would be increased from 2,793,000 in 1942 to 4,200,000 in 1944 and 4,673,000 in 1945. Sweet potato acreage would go up from 707,000 in 1942 to 1,400,000 in 1944 and 1,800,000 in 1945.

Dry Beans and Peas

The proposed food plan calls for a production of dry edible beans and peas well above that of 1942. The 1942 acreage of beans was 2,135,000; it would be increased to 3,800,000 in 1944 and 4,400,000 in 1945. The acreage of peas was 501,000 in 1942; this would be increased to 1,100,000 in 1944 and 1,300,000 in 1945.

Oil Crops

The three major oil crops are peanuts, soybeans, and flaxseed, and all three should be increased heavily. Peanut acreage should climb from 3,690,000 in 1942 to 7,500,000 in 1944 and 9,100,000 in 1945. Soybeans should increase from 10,762,000 acres in 1942 to 14,500,000 in 1944 and 15,500,000 in 1945, while flaxseed acreage would rise from 4,691,000 in 1942 to 6,200,000 and 6,400,000 in 1944 and 1945 respectively.

Wheat

Wheat is, like cotton, a crop where the adjustment between areas is most important. In the Corn Belt and eastern areas there are about 2,000,000 acres of wheat which should be eliminated, since other food and feed crops are more efficient on these acres. On the other hand, wheat production can and should be expanded in the Great Plains area where there is no good alternative crop. Thus a 2,000,000 acre decline in the Corn Belt and the East would be more than offset by an increase in the Great Plains area. The net effect would be an increase of total wheat acreage from 52,500,000 acres in 1942 to 62,000,000 in 1944 and 65,400,000 by 1945.

...the ...
...the ...
...the ...
...the ...

...the ...
...the ...
...the ...
...the ...

...the ...
...the ...
...the ...
...the ...

...the ...
...the ...
...the ...
...the ...

...the ...
...the ...
...the ...
...the ...

...the ...
...the ...
...the ...
...the ...

...the ...
...the ...
...the ...
...the ...

...the ...
...the ...
...the ...
...the ...

...the ...
...the ...
...the ...
...the ...

...the ...
...the ...
...the ...
...the ...

...the ...
...the ...
...the ...
...the ...

...the ...
...the ...
...the ...
...the ...

Grain and Other Feed Crops

Corn acreage would increase from 91,011,000 acres in 1942 to 97,700,000 in 1944 and 98,000,000 in 1945. The acreage of oats and barley would decrease slightly while that of grain sorghums would increase. Legume hay, especially alfalfa and peanut hay, would increase while other hay would be reduced. The total acreage in feed (including corn) would be increased by about 8,500,000 in 1945, with a shift to the particular crops which yield the most feed per acre.

Vegetables

The war food program calls for an increase of vegetables (to be marketed fresh) from 1,683,000 acres in 1942 to 2,200,000 acres in 1944 and 2,456,000 in 1945. Vegetables for canning and other types of processing would take 2,600,000 acres in 1944 and 2,900,000 in 1945, as opposed to 2,010,000 acres in 1942. At the same time, however, different vegetables would be grown: instead of asparagus, beets, celery, lettuce, and cucumbers, the emphasis would be on the more nutritious ones such as carrots, spinach, cabbage, and tomatoes. These figures are for the commercial vegetable crop, and do not include Victory Gardens.

Livestock

All types of livestock are considered together because feed supplies are bound to be severely limited during 1944 and 1945. In such a situation, a decision to keep any one livestock group at a certain level affects directly and immediately the level at which we can maintain the other groups.

Basic to all livestock calculation is the fact that present numbers of livestock cannot be maintained without a shift from food to feed production. The very heart of any realistic war food program is a substantial movement in exactly the opposite direction. Therefore the changes outlined below are designed to reduce gradually the present livestock numbers to levels which the proposed production program can safely support in 1944 and 1945.

If done consciously and carefully this reduction will result in increased supplies of certain animal products in 1944, without a parallel increase in resources devoted to their production; if allowed to proceed haphazardly, the shortage of feed will cause sudden spurts of animal slaughter, unforeseen gluts of certain products, and the wrong choice of what livestock should be slaughtered and what retained. For one of the most important aspects of reducing total livestock numbers is to keep exactly that proportion of all types which will produce the most nutrients while using each of our food production resources in the most efficient way. In calculating the shifts in livestock production outlined below, it is assumed that a substantial amount of feed will be imported from Canada and other countries.

Dairy cows convert animal feed into human nutrients more efficiently than any other type of livestock enterprise. Therefore, they should have first call on all types of feed, both roughage as well as concentrated feeds (such as grain, soy and cottonseed meal, etc.) wherever total nutrients in the milk can be used as food. The number of dairy cows should be increased as rapidly

[Faint handwritten notes at the bottom of the page]

1900

Journal of Management Education 26(10) 1189-1207
© The Author(s) 2002

as possible. Dairy cows should also be fed at heavier rates wherever this will increase milk production per cow. Suitable adjustment of the beef-milk price relation would insure that so-called "dual purpose" cattle, which can be used either as beef or for milking are used for the latter purpose rather than the former. By a combination of these methods total milk production can be increased from 119 billion pounds in 1942 to 125 billion pounds in 1944 and 127 billion pounds in 1945. The major gain in nutrients from milk will come from better utilization rather than increased production, however.

Beef cattle are an essential part of the proposed war food program since dairy cows cannot use all our present or prospective feed production, and because a great deal of land is suitable only for hay or grazing. Even while increasing the number of dairy cows as rapidly as possible, enough roughage feeds will be left over to maintain beef herds at about their present size. Feed-lot feeding will have to be reduced, however, both because of a prospective shortage of concentrated foods and because it represents an inefficient use of these feeds. This may result in a small decrease in beef supplies due to a slightly lower weight per animal.

Sheep would also be maintained approximately at present levels, in order to utilize the remainder of the roughage feeds, and grazing and pasture lands. This also has the advantage of keeping up the production of wool.

Hogs would receive the most drastic reduction in total numbers resulting from the decline in feed supplies, which in turn is due to the planned shift away from feed crops toward food for direct human consumption. There would, however, be an immediate and important gain in pork and lard supplies from this reduction which would necessitate the marketing of about 103 million head in 1944. Marketing in 1945 would fall off sharply to about 89 million head, which would represent a marketing rate in balance both with hog numbers and with feed supplies at that time.

Poultry would also be cut by heavy marketings in 1944, in order to reduce flocks to a size consistent with feed supplies. However, egg producers should get priority on the amounts of feed to be used for poultry, which would keep egg production at about the present level. Meat poultry supplies after 1944 would be sharply reduced, but as in the case of hogs, there would be a substantial gain during 1943 and 1944 itself.

To sum up the 1944 and 1945 production plan in livestock, dairy cows would receive first call on all feeds and both dairy herds and feeding rates would be increased as rapidly as possible. Beef cattle and sheep would be maintained at about present numbers, to utilize the remaining roughage feeds and pasture and grazing land. Hogs and poultry would be reduced sharply (egg producers least of all) to a level consistent with remaining feed supplies, but this would result in a substantial though temporary gain in pork and poultry during 1943 and 1944.

Allocating Resources Between Food Production and Other War Uses

Food production cannot be considered apart from the rest of the war program, for it competes directly with every other part of the war effort for labor, for scarce materials, for scarce shipping to bring in fertilizer, for scarce

1. The first part of the report deals with the general situation of the country and the progress of the work during the year. It is a summary of the work done and the results achieved. It is a general overview of the work done and the results achieved.

2. The second part of the report deals with the specific work done during the year. It is a detailed account of the work done and the results achieved. It is a detailed account of the work done and the results achieved.

3. The third part of the report deals with the financial statement of the year. It is a summary of the financial statement of the year. It is a summary of the financial statement of the year.

4. The fourth part of the report deals with the general remarks and conclusions. It is a summary of the general remarks and conclusions. It is a summary of the general remarks and conclusions.

5. The fifth part of the report deals with the general remarks and conclusions. It is a summary of the general remarks and conclusions. It is a summary of the general remarks and conclusions.

6. The sixth part of the report deals with the general remarks and conclusions. It is a summary of the general remarks and conclusions. It is a summary of the general remarks and conclusions.

7. The seventh part of the report deals with the general remarks and conclusions. It is a summary of the general remarks and conclusions. It is a summary of the general remarks and conclusions.

domestic transport to move labor and equipment to the farms and crops to processing centers and urban markets. No war food program is realistic unless it balances food production needs against all the other voracious war-time demands on our national resources.

Labor is perhaps the most critical of these resources. The war food program proposed above, with its various adjustments and increases, would require a labor increase of about 3% on a year-round basis, or about 300,000 workers. This increase is not steady throughout the year, however; it varies from 100,000 additional farm workers during the winter to a peak of 600,000 during the harvest. These figures are based on present level of efficiency; if efficiency can be raised, the needs will be correspondingly lower.

Precisely how these additional workers can be secured, or the efficiency of present farm labor raised, will be discussed at length in Section III. But we can conclude that vigorous recruitment efforts combined with careful plans to increase efficiency will provide the labor-power necessary to carry the program as a whole.

Some additional machinery, such as combines for soybeans, peanut pickers, and potato diggers would be essential, though use of present machinery more hours per year would keep the increase to a minimum. Fertilizer requirements for the new crops would be met through the saving from cotton and tobacco, which are heavy fertilizer users.

Some processing facilities would have to be enlarged, while others would not. Despite large proposed increases in the oil crops, present extraction machinery should be sufficient if operated to capacity. Some areas, especially the Corn Belt, might have inadequate equipment to handle the large crop increases suggested. This can be met either by moving the mills to the crops or the crops to the mills, the decision being governed by the area in which the final product is to be used. Some further increase in equipment for milling soy flour and similar products for food use might also be necessary.

An important increase is planned for processing equipment to turn out concentrated foods for military and foreign use. However, all possibilities for diverting processed foods from non-essential civilian uses should be realized in preference to expansion of processing facilities. The use of processing equipment for civilian consumption should be discontinued except to meet special needs (such as canned milk for babies), or to preserve foods which would otherwise be wasted, or to save on transportation and storage.

Substantial improvement is needed in choosing foods for shipment abroad. We are now shipping large quantities of dried eggs which in comparison to dried skim milk provide 58% more calories and 37% more protein, besides requiring 14% less shipping space. But the eggs are much more expensive to produce and take 20 times the labor in processing. In addition much of the skim milk is fed to livestock, resulting in waste of two-thirds or more of the total nutrients. Soy flour should also be considered as a possible substitute. These factors should all be considered; since as the shipping situation improves the balance will shift toward those foods which can be produced more economically even though they require more shipping.

Perhaps our most important new processing need is equipment for turning out dried skim milk. The purpose is only in part to meet export demands: more important is the fact that about 30 billion pounds of skim milk a year are now wasted or fed to livestock, and much of this is badly needed for food use. The proposed war food program contemplates use for food of about 10 billion pounds a year of this skim milk. Present drying capacity is about one billion pounds a year, though only some 450 million pounds will be processed in 1943.

It is estimated that capacity operation of present drying plants, plus conversion of some egg drying equipment to handle milk, would take care of approximately 30% of this 10 billion pounds. New roller drying plants to handle the remaining 70% would entail 600 each of boilers, roller driers, heavy duty separators, and other equipment, much of which competes directly with military demands for materials and manufacturing facilities. A milk drying program of this scope would also require 4,850 additional trucks and 830,000 more milk cans. Besides the labor needed for collection of this milk, 1200 additional men would be needed in the drying plants.

Despite the heavy requirements of equipment and labor necessary to a dried skim milk program of this size, it is nevertheless recommended as an economical use of our resources. The end result would be an increase of 600,000,000 pounds in a highly nutritious and concentrated food which is equally suitable for civilian, military, or foreign use. The same amount of skim milk fed to hogs would produce only 183 million pounds of pork and lard. This program should be reduced only if careful investigation demonstrates that some of this skim milk can be utilized for food in other forms (as fluid milk, for instance) while using existing facilities. The purpose in view is to use as much milk as possible for food, in whatever form, rather than have it wasted or used for livestock feed or industrial purposes.

Civilian Food Distribution

The first aim of an adequate war food program must be to help win the war. Toward that end we have suggested broad changes in the variety and amounts of food which should be produced, as well as in the consumption patterns of peacetime America, in order to provide the maximum total nutrients with the least expenditure of resources. Yet that production effort may be wasted unless our food distribution system is also geared to the needs of war.

An adequate system of war food distribution first of all must distribute enough food to maintain the national health and vitality. Second, it must distribute this food in an equitable manner. And finally, it must make special provision for those who have special or more-than-average needs.

In essence, the real purpose of a war food distribution system is to see that the diet of every American is adequate both to maintain health and vigor and to permit him to discharge his special duties in the war effort. It is meaningless for the "average" diet to be adequate, if unequal distribution leaves a substantial part of our people with less than enough. Therefore, the first and most important objective should be to bring up to an adequate minimum those who are now below it--though this would in some cases involve reductions for those who are well above necessary minimum levels.

A very important factor that has contributed to the apparent scarcity of food is the tremendous war-time increase in consumer purchasing power. This excess purchasing power is the breeding ground of black markets and of much wastage of food. An adequate taxation program designed to eliminate or withhold this purchasing power has been talked about but noticeably postponed. Proper control of the distribution of food is dependent upon a promptly instituted program of taxation or compulsory savings that will absorb a high percentage of this excess purchasing power.

Special Needs

It should be clearly recognized that some groups need more food or more of certain foods, than the general population. The most important of these groups are school children, and war workers engaged in heavy work. There are two ways to provide for these special needs: either rations may be adjusted for different individuals, or special distribution systems such as supervised school lunches or factory canteens similar to those in Britain might be encouraged. Largely because of the administrative difficulties inherent in differential rationing, it is probably wiser to stress the second method. Furthermore scientific preparation of food on a large scale results in considerable gains in food, fuel, labor, and total nutrients, as compared to preparation of the same food in household kitchens.

Sharing Total Food Supplies Among All Major Uses

In allocating food supplies between the various uses, military and civilian, domestic and foreign, there is a tendency to forget that the largest call on our food is for American civilian consumption. Not only does civilian America use the greatest part of our food supply, it is also becoming the central strength of the United Nations.

The food needs of the United States should not and must not be considered as leftovers, to be satisfied after all other claims have been met. In the long run they are as important as any other claim on our food resources--and clear public understanding of this fact might go far toward allaying general concern over food as well as tendencies toward hoarding and irrational consumption.

Our food must be so divided among the various claimants, civilian and military, domestic and foreign, that it will contribute most to winning the war. This automatically rules out any consideration of whether the food can be paid for, or whether one group can pay more than another. The advancing of the war effort must be the only guide.

All the various claims on our food resources are important, and none can be consistently disregarded. Some needs should, however, get first call on certain types of food, or food in certain forms. Food which is compact, highly nutritious, and easily prepared and preserved is obviously most suitable for use by the armed forces of the U. S. or our allies, and for shipment abroad. Therefore military and foreign requirements for these types of food, such as canned meat, dried milk and eggs, dehydrated vegetables, etc., should be filled first. Food deficiencies which represent critical gaps in the civilian diet of allied nations might also receive special consideration; if the general Russian diet were passable save for a dangerous deficiency in fats and oils,

1914
The first of the year
was a very dry one
and the crops were
very poor. The
weather was very
warm and the
crops were very
poor. The
weather was very
warm and the
crops were very
poor.

The second of the year
was a very wet one
and the crops were
very good. The
weather was very
cool and the
crops were very
good. The
weather was very
cool and the
crops were very
good.

The third of the year
was a very dry one
and the crops were
very poor. The
weather was very
warm and the
crops were very
poor. The
weather was very
warm and the
crops were very
poor.

The fourth of the year
was a very wet one
and the crops were
very good. The
weather was very
cool and the
crops were very
good. The
weather was very
cool and the
crops were very
good.

The fifth of the year
was a very dry one
and the crops were
very poor. The
weather was very
warm and the
crops were very
poor. The
weather was very
warm and the
crops were very
poor.

The sixth of the year
was a very wet one
and the crops were
very good. The
weather was very
cool and the
crops were very
good. The
weather was very
cool and the
crops were very
good.

The seventh of the year
was a very dry one
and the crops were
very poor. The
weather was very
warm and the
crops were very
poor. The
weather was very
warm and the
crops were very
poor.

for example, then unusual efforts to remedy that deficiency might be warranted.

Food Yardstick

The most effective war-time allocation of total United Nations food supplies demands some yardstick for evaluating the various claims that will be made upon it. We therefore suggest that an adequate minimum diet adapted to traditional differences and types of food consumed, be established for both the civilians and the fighting forces of each of the allied nations. Thus the Canadian or British diet might be similar to the United States, while China or Russia would include quite different foods. If American civilian diet is well above our own adequate minimum level, while civilians in an allied nation are well below theirs, then larger amounts might be allocated to the allied civilians in question. This assumes, of course, that the necessary shipping is available, that the food in question will be used with the greatest economy and for essential purposes only, and that it can be secured from no other practicable source.

These adequate minimum diet levels should also be established for special groups among the civilian population, such as war workers, so that extraordinary efforts can be made to meet their needs. In considering food allocations to one group in any country, the diet level of all the other groups should be taken into account. In practice this means that no additional food would be allocated to one group, as long as any other group in the same country was substantially above an adequate minimum level.

Needs for Reoccupied Areas

A new and unprecedented claim on our food supply looms in the immediate future--the needs of areas wrested from the hands of the Axis. There are two reasons for distributing food in reoccupied territories; first to secure the military, economic, and political cooperation of the liberated people, and second, for humanitarian considerations. Food distributed for the first reason is just as important as the needs of our own armed forces. A populace embittered by starvation will not only be a constant drain on the occupying force; they will likewise deny the output of farms and workshops which could strengthen the next thrust against the enemy. A minimum amount of food is essential to help turn the reoccupied areas into an effective base for further operations.

Future pressures for humanitarian distribution of food in reoccupied areas will be enormously strong; but they must be judged with a more critical eye. The food resources of the United Nations are scant enough to meet the gigantic demands made upon them, as already stated. With the possible exception of such limited groups as young children, or nursing or expectant mothers, it is doubtful whether any extensive allocations from U. S. food supplies can be made to reoccupied areas for purely humanitarian reasons before the end of the war. However, should Germany and Italy be defeated first, sizeable European relief programs might be possible even though the war against Japan continued for some time. The greatest need for food relief will come after the end of hostilities, when adequate shipping will be available and demands upon U. S. food supplies perhaps not so critical.

Unanimous agreement has been reached among all the U. S. Government agencies concerned that relief for reoccupied areas should be handled by a genuine international agency, and that whatever food supplies the United States could contribute for this purpose should be made available to such an agency. Until this international body could be created, however, the use of United States food for relief in liberated areas should be kept under United States control. If Britain or other countries use U. S. Lend-Lease food for relief distribution in liberated areas, the United States food authorities would keep constantly informed of policies governing such distribution and the progress made; both these would be taken into account in further Lend-Lease allocations to the countries in question.

Building Essential Reserves

The final major claim on our food resources--the need for a carefully conceived stockpiling program--is not so much a claim as a method of making sure that other claims on our total food supply will be met promptly and adequately. There are two kinds of future needs which a stockpile is designed to meet. One kind are those needs which are certain and predictable--such as the fact that we know we shall need wheat to make bread the year round, although wheat is harvested only at certain times. This is merely a question of adjusting the different chronologies of production and consumption to each other. The second group of future needs are those which may or may not actually arise. To prepare for this second group of needs involves the use of sound actuarial principles.

Some needs are in part relatively certain, and in part highly problematical. For example, we can be reasonably sure that reoccupied areas will need food in 1943 and 1944 up to a certain level; there is some chance that they will need more. The best practice, therefore, is to set up a definite reserve for that portion that seems certain and provide a contingency reserve based on the percentage of probability for all needs above that level.

To a greater or less degree, all foods deteriorate in storage. At one extreme is fluid milk, which must be consumed within a few days; wheat on the other hand, may be stored for several years. Therefore a food stockpile does not mean retaining individual food items for any length of time. It is rather in the nature of a revolving fund, with food being constantly added and constantly taken away.

The foundation principle in operating our stockpile programs is to keep a sharp distinction between the stockpile for those future needs which are certain and a contingency reserve for those needs which are uncertain. Definite amounts of food should be in the first stockpile at all times capable of meeting the expected demands. The contingency reserve, however, should be calculated according to the insurance principle outlined above.

If each of the claimants on our total food resources were aware that a carefully administered contingency reserve existed which could be called upon to meet any one of a number of contingencies which might arise, then every estimate of needs could be as accurate as possible, instead of as safe as possible. It would, for example, clearly be foolish for both the United States and Great Britain to maintain contingency reserves against a possible growth in ship sinkings: one reserve for one contingency is sound and economical practice.

III. -- EFFICIENT FOOD PRODUCTION, DISTRIBUTION, AND USE

The broad food program outlined in Section II must be translated into various production components before it can be adopted as feasible, or rejected as too expensive of labor, equipment, and other war-scarce production components. The first and most important of these components is labor.

Labor

Food production today suffers not so much from insufficient labor as from inadequate utilization of available labor. For example, the average migratory farm worker before the war had only 150 days of employment throughout the year, and while there has undoubtedly been some increase during the war, it does not appear to have reached the maximum since. The heavy yields of 1942, when output per worker was 12% higher than in 1941, could not have been handled if a considerable "reservoir of inefficiency" did not exist. As already pointed out, the total supply of farm labor has not declined appreciably: in 1942 it was in fact almost exactly the same as in 1941 and only 5% less than in the 1935-39 period of farm labor glut. The change has come in the composition of the farm labor force, rather than in numbers.

The food production plan proposed in Section II--if we assume the present level of "efficiency" in the use of farm labor--would require a number of additional workers varying from 100,000 in winter to about 600,000 at the harvest peak. To state it another way, 100,000 additional year-round workers would be needed plus varying numbers of part-time workers up to 500,000 assuming present levels of productivity per worker.

There is no reason, however, to be satisfied with present efficiency levels. Greater mobility of farm labor would help considerably to provide full and steady year-round employment for present farm workers. This in turn requires full knowledge of farm labor needs week by week and section by section, the means of transporting farm workers swiftly from section to section, and the assurance of full employment and adequate wages and working conditions wherever they are working. Another considerable efficiency gain can be made on those farms which are too small or too specialized to need the full labor time of their present workers: the answer in those cases is either diversification to allow full-time employment, or part-time work elsewhere during slack seasons.

By a combination of these and other methods, efficiency can be increased to the point where the proposed new food production plan will not need additional year-round workers. But the increase in efficiency, however great, probably cannot wipe out the need for extra part-time workers during the harvest and other peak seasons. These peak periods depend upon the calendar and the weather, and can not be postponed or put off until the slack seasons. Therefore the bulk of the effort aimed at increasing the farm labor force should be spent on the recruitment of additional part-time workers.

Part-Time Farm Labor

There are many sources of extra part-time farm labor that can be tapped in war-time. First are the schools, where the higher grades can and should be released to assist on the farms during the harvest and perhaps during other peak periods as well. Intelligent planning of the school schedule area by area can accomplish the desired end without damage to educational standards. A second technique would be the release of workers from certain industries for a few days, where the work is not critically necessary to the war effort and where the gap will not cause serious harm. A third and highly productive method will be community mobilization in the smaller cities and towns in areas of heavy farm labor need, devoting practically the entire adult population of the town to agricultural work for a few days. All these methods require careful community planning and support but all are quite sound and workable.

A number of institutional groups are potential sources of hundreds of thousands of part-time workers. Large numbers of foreign workers from Mexico and the West Indian islands are already being brought in under carefully supervised contract conditions, and this practice can be expanded. The Japanese evacuated from the West Coast are another important potential source, the large majority of whom have valuable agricultural experience. The increasing numbers of Axis prisoners may, under international law, be employed in agriculture with their consent and under certain easily met minimum wage and living standards. The inmates of civil prisons and institutions are another group which can provide tens of thousands of part-time workers, if necessary, given adequate advance preparations. And finally, should harvests in a few sections be threatened with destruction, there may be justification for brief use of members of the armed forces stationed nearby.

The above listing of potential sources of part-time farm workers should be ample evidence that they can be found, given intelligent planning, organization, and foresight. Indeed, the sources are so numerous that it should seldom be necessary to call upon all of them. The experience gathered and the needs demonstrated by the 1943 harvest should be sufficient preparation for the recruitment of any desired number during 1944 and 1945.

Mobility--not Freezing.

Providing adequate labor for the proposed 1944 and 1945 production program depends first of all on increasing the mobility of our agricultural workers. Instead of "freezing" them in their present locations, every effort should be made to insure their rapid, orderly and planful movement from one task and one area of peak demand to another. It is directly contrary to the interests of the war that workers be frozen on farms that are too poor or too small, or which can produce only those crops we have little need for. The prevailing practice of requiring the country agent to approve the transfer of any farm worker out of the county merely assures the continuance of the present poor distribution and use of farm labor, and in fact helps to wipe out the valuable army of migratory farm workers whom we have had in the past. Even worse is the practice, now observed officially by Louisiana, Arkansas, Mississippi, and Missouri, and unofficially by other states, of prohibiting the recruitment of

The first part of the report deals with the general situation of the country. It is a very interesting and informative study of the country's development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is easy to read. It is a valuable contribution to the study of the country's development.

The second part of the report deals with the economic situation of the country. It is a very interesting and informative study of the country's economic development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is easy to read. It is a valuable contribution to the study of the country's economic development.

The third part of the report deals with the social situation of the country. It is a very interesting and informative study of the country's social development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is easy to read. It is a valuable contribution to the study of the country's social development.

The fourth part of the report deals with the political situation of the country. It is a very interesting and informative study of the country's political development. The author has done a great deal of research and has gathered a wealth of material. The report is well written and is easy to read. It is a valuable contribution to the study of the country's political development.

of farm labor for out-of-state use. Unless both federal and state restrictions on the controlled movement of farm labor are removed, any food program that involves either a substantial increase in total output, or a significant shift in emphasis from one crop to another, is impossible without a considerable increase in the total number of farm workers. When the desired results can be achieved by better use of the existing farm labor force, any such increase is indefensible and directly contrary to the interests of the war effort.

Better Use of Farm Machinery

One tested method of increasing agricultural production is by using more machinery. Today, however, the manufacture of new machines and spare parts competes directly with the manufacture of arms, munitions and other essential war supplies. Thus any increase in the total amount of agricultural machinery is unjustified so long as better use of existing equipment is possible.

There are many opportunities for better use of existing equipment, since agricultural machinery is generally used below capacity. To some extent this is inevitable, as in the case of specialized equipment such as harrows, sprayers, potato diggers, and the like. There is, however, a great deal of general purpose equipment--tractors are the most obvious example--whose utilization could be greatly improved.

The Bureau of Agricultural Economics estimates that tractors on American farms are used on an average of about 493 hours per year. This figure, however, includes quite large variations: About one-sixth of these tractors are used less than 200 hours per year, while on the other end of the scale the top 20% are used more than 800 hours annually. If the lower sixth could be used as efficiently as the top fifth, it would in effect add half a million tractors to American farms.

Better use of existing farm machinery can be geared perfectly into better use of existing farm labor. In general, the larger farms have a surplus of machinery but inadequate labor, while the medium and smaller farms are in exactly the opposite position. County war boards might encourage arrangements whereby small farm operators work part-time on the larger farms in return for the machinery and equipment of the larger farms being made available to speed up work and save time on the smaller farms.

Obstacles to a War Food Program--The Adjustment Program

The agricultural adjustment program originally contained many provisions which would have seriously interfered with needed wartime changes and expansion of food production; and while most of these have been removed, a few still remain. The only crops where acreage is still restricted are cotton and tobacco, though farmers are allowed to plant 10% or 5% (respectively) in excess of their allotments without penalty. Though in general it is desirable to decrease rather than increase the acreage in these two crops, the old adjustment program does bar some badly needed wartime changes.

...the ... of ...
...the ... of ...
...the ... of ...
...the ... of ...
...the ... of ...

...the ... of ...
...the ... of ...
...the ... of ...
...the ... of ...
...the ... of ...

...the ... of ...
...the ... of ...
...the ... of ...
...the ... of ...
...the ... of ...

...the ... of ...
...the ... of ...
...the ... of ...
...the ... of ...
...the ... of ...

...the ... of ...
...the ... of ...
...the ... of ...
...the ... of ...
...the ... of ...

...the ... of ...

...the ... of ...
...the ... of ...
...the ... of ...
...the ... of ...
...the ... of ...

In cotton, the restrictions prevent any considerable increase in cotton production in the Mississippi delta, though as already pointed out the long staple delta cotton is badly needed for the war effort and cotton is a better oil crop in this area than any alternative. Cotton takes up some 40 to 45% of the land in the Mississippi delta at present; a desirable wartime goal for long staple cotton in this area would be 80-90%, which is obviously impossible as long as present restrictions on cotton acreage in this section remain. The adjustment policy simultaneously encourages other areas to keep up short staple cotton production, of which we have an adequate supply.

In both cotton and tobacco, the old adjustment program tends to freeze the existing pattern of production at a time when drastic changes are essential to the war effort. Today's needs demand the removal of all restrictions on crop acreage, to prepare the way for positive program of crop selection on a national basis.

The Greatest Obstacle--Parity

Probably the greatest hindrance to the food program we need to win the war is rigid adherence to the parity formula. This is not because the general level of farm prices is too high--or too low. Rather, it is because of the relationships which the parity formula maintains between the different crops and livestock products.

Parity prices do not represent the differing nutritive values of the various foods; they do not represent the relative urgency of our wartime need for each food; they do not represent the relative costs of producing the many different foods. The only thing which parity prices in fact represent is the economic relationships of a by-gone day, usually 1909-14 -- two wars and 30 years ago. Is it any wonder that they are an utterly faulty mechanism with which to regulate our wartime food production program?

Wheat's parity price in February, 1943, was \$1.41 per bushel. In view of the striking advances in wheat mechanization since the years on which the parity formula is based, that price is much too high. The parity price would encourage American farmers to turn out much more wheat than the nation could ever use for food--while at the same time the lower parity prices of other grains would prevent the surplus wheat from being used as animal feed. In some areas wheat is the best possible feed crop per acre and per hour of labor; yet the supported price of wheat causes the farmer to lose money if he uses his wheat for feed instead of selling it on the market. In other sections land better suited for bean production is kept in wheat, because the price relationship makes wheat more profitable.

As the parity dogma keeps some prices too high, it keeps others too low. The parity price of milk in April 1943 was \$2.43 per hundredweight. While the actual price was 24% above this level, this is still too low when compared to the prices of other farm products to bring forth needed supplies of milk. There is urgent wartime need for long staple cotton, yet the parity formula dictates such a small price difference between short staple and long staple that the production of long staple is not adequately encouraged. Thus in case after case the parity formula has interfered with the adjustments essential to any adequate war food program.

The parity formula also affects the different forms in which a product may be used. In the case of milk, all past price relationships were based on the butterfat content; in recent years, about 45% of the other milk solids have commonly been used for livestock feed, for industrial purposes, or wasted. Nutritionists have long recognized that nutritionally the skim milk is far more important than the cream, being an excellent source of some of the most important proteins, minerals and vitamins. But the present price structure, reflecting old commercial practices instead of current nutritional needs, keeps butter at 48¢ per pound while dried skim milk sells for 14 $\frac{1}{2}$ ¢ or less. Dried skim milk is in many ways the nutritional equivalent of dried eggs, but sells for only one-eighth the price, i.e., 14 $\frac{1}{8}$ ¢ per pound as compared to \$1.14 per pound. Therefore it is actually profitable for farmers to feed skim milk to hens in order to stimulate egg production, although the net result is the loss of over three-fourths of the nutrients.

Any rigid price system, based on relationships which existed among the various food products thirty years ago is fatal to getting the foods we need in the quantities we must have. A price level high enough to stimulate full productive efforts is essential; but to insist upon a rigid and unchanging relationship between prices for various foods, without regard for their nutritive values or their production costs is to hamstring any effective war food program. The parity concept must be discarded, and replaced by a price structure designed to secure desired food production adjustments.

A carefully designed price structure is by itself no Open Sesame which will immediately result in a perfect war food program. There will still be urgent need to set national and individual goals for farmers, consistent with an ambitious war food program; to provide a maximum of labor, equipment and technical assistance; to encourage shifts from less needed to more needed crops; to teach farmers how to grow and store the new crops; to furnish incentives which point toward cooperation with the program as a whole; etc.. But the effect of all these can be cancelled out if prices for various food products pull the farmer in another direction; for it is contradictory and self-defeating to ask the farmer to grow one thing when it is clearly more profitable for him to grow another. The price structure is paramount in some cases: the relation between fluid milk, butter, cheese and dried skim prices is the major determinant of how our total milk supply is used.

Flexibility Needed.

One obstacle to flexibility in shifting from one crop to another is the farmer's fear of post-war complications. Some farmers are undoubtedly continuing to grow cotton and tobacco on the assumption that any future acreage limitation plan will be based on their past acreage or production. Their reluctance to shift to other crops can be overcome by firm assurance that such wartime adjustments will not operate to their future detriment.

Meeting our food goals will automatically involve some expansion where production costs are far above average, and some of this high-cost production may not be either necessary or profitable after the war. The desirability of the increase is nonetheless a matter of public policy, and the extra cost of making

the shift should be considered a public responsibility just as was the cost of erecting or converting plants for additional production.

In such cases it is essential that the farmer and processor be compensated for the extra cost. This compensation might well be in the form of higher prices paid only for actual increases above normal production. This would be much less expensive and much less inflationary than higher prices for the entire crop. Granting the difficulties of administering a "two-price" policy, the potential benefits are certainly great enough to warrant a trial on a few farm commodities as soon as possible.

The violent controversy over subsidies has served mainly to obscure the prosaic advantages--and distinct limitations--which they have in an all-out war food program. Yet both must be clearly understood before subsidies can be used effectively.

Essentially, subsidies are a method of changing either retail prices or farm prices, while the other remains constant. This may be done for three separate and distinct purposes: (1) to lessen or eliminate inflationary tendencies; (2) to stimulate production of selected crops; and (3) to encourage the movement of food through normal, legitimate channels. Each of these purposes has value, under the right circumstances; but the indiscriminate use of subsidies has no justification.

In the battle against inflation, subsidies make it possible to reduce consumer prices without disturbing farm income, or to permit legitimate increases in farm income without higher consumer prices. Today over two-thirds of the national income is devoted to the war, and less than one-third to civilian needs; yet the civilian one-third probably influences the whole price structure more than the military two-thirds. Food price increases bring demands for higher wages, which in turn boost all production costs both for civilian and military items out of all proportion to the relatively small increase in the cost of food. Thus food costs, the most important item in the wage earner's budget, are the tail that can wag the dog and increase the war's total cost astronomically.

The second purpose of subsidies is to encourage production of selected crops without starting the inflationary cycle mentioned above. Not only do tremendous gains attend the policy of making the most desirable crops also the most profitable ones: it is also often necessary to ask for wartime production of particular commodities which are critically needed now, but which will be distinctly marginal, uneconomic, or perhaps not needed at all after the war.

It has been argued that subsidies on rationed foods are contradictory, since their purpose is to keep prices low on foods which are in short supply. This is probably unsound reasoning, for it implies that prices on such foods should be raised to the point where demand will equal supply, which means in essence that we retreat from rationing and let food distribution be governed by prices as during normal times. This would deny many essential foods to low-income groups, which is thoroughly undesirable.

There are ways in which subsidies are inflationary. They are inflationary to the extent that they increase farm income directly--but this increase is probably less inflationary than an increase in food prices, wages, and the general price level. The inflationary effect of subsidies would not be a serious problem, however, if there were an adequate tax program which would soak up all excess purchasing power regardless of its source.

Relation of Subsidies to Administrative Controls

The third and highly important advantage which subsidies may have is to encourage the movement of food through regular, legitimate channels. This is increasingly the crux of the whole food distribution problem: any food distribution system is more likely to be wrecked by the food which does not move through it than by the food which does. The normal food channels are not difficult to control, but the black market consists of food moving entirely outside these channels.

Selective subsidies can help encourage legitimate distribution by decreasing the spread between the legitimate price to the farmer and the black market price; it "bids against" the black market, in a sense, representing a safe, legitimate bonus which the farmer is likely to prefer to a higher black market price which carries the hazard of severe punishment. But this requires that the subsidy apply only to that portion of the total supply which moves in legitimate channels. In the case of meat, where the ugliest black market has developed, this means that the subsidy would be paid only to those farmers who marketed their meat through licensed slaughterers and packers. (Any packer and slaughterer could become licensed, however small, if he kept the necessary records and met the standards laid out by the appropriate authorities.)

Clearly, this is not the normal conception of the purpose for which subsidies are used. However, this particular use does not interfere in any way with applying them to cut prices for consumers or raise producer income.

In fact, it would be the height of folly to use subsidies for any purpose without securing at the same time this extremely important by-product, which in the long run may be more important than any effect on producer income or consumer prices.

The insertion of a subsidy at the packer-wholesaler level can be further simplified, and other important gains secured as well, if the total supply of meat or any other rationed commodity threatened by black market operations actually passes under government title at some point in the distribution chain. The ordinary food distribution picture may be conceived of as an hour-glass: food produced by millions of producers passes through the hands of a much smaller number of wholesalers, and thence finally to millions of consumers. The narrow neck of the hour-glass, the packer-wholesaler level, is obviously the place where it is easiest for the government to take title. This does not mean that the government itself will purchase the various foods, or that these foods will be stored in government warehouses, it does mean that all wholesale buying operations would be carried out by the regular wholesale food trade, but acting as agents for the government.

1. The first part of the document
describes the general situation
of the country and the
state of the economy.
It also mentions the
state of the
country.

2. The second part of the document
describes the state of the
economy and the
state of the
country.

3. The third part of the document
describes the state of the
economy and the
state of the
country.

4. The fourth part of the document
describes the state of the
economy and the
state of the
country.

5. The fifth part of the document
describes the state of the
economy and the
state of the
country.

6. The sixth part of the document
describes the state of the
economy and the
state of the
country.

7. The seventh part of the document
describes the state of the
economy and the
state of the
country.

The advantages of this plan are several. First, it would make the payment of a subsidy simple, for the wholesaler would merely buy for government account at one price and sell at another. The selling price might even be lower than the buying price, if so large a subsidy were contemplated. Second, the use of subsidies at this point would encourage producers to send their food through legitimate channels, because only that portion moving through such channels would receive a subsidy. Finally, government ownership at one point in the chain would go far toward preventing leakages at any later point; for resale by the wholesaler would be allowed only under certain stringent conditions, and the penalties for misappropriating government funds or property are much surer and swifter than the penalties for violating administrative regulations.

Government title to those rationed foods whose distribution seems threatened with breakdown is not by itself a guarantee that the black market will automatically disappear. It does encourage farmers to send their food through legitimate channels, and it does make simpler the task of controlling distribution after food leaves the wholesaler, for the reasons outlined above. But other methods of attacking the black market problem must be used simultaneously. Enforcement must be tightened all the way down the line, with heavy penalties both against those who sell to and those who act as black market dealers. Furthermore, it is essential to have some kind of check on supplies in the hands of producers at the farm level. The latter control is in process of being set up, with the county war boards, country agents, and other appropriate officials keeping watch over any unusual and inexplicable drop in the meat animals on a given farm. These officials will also presumably have access to the records of packers and other legitimate buyers, to help indicate where the stocks have really gone.

Assembly, Processing, and Transportation.

Between the time when food leaves the farm and the time when it reaches the retail store there lie several operations, chiefly assembly, processing, and transportation. The iron necessities of war demand that these operations be organized with a minimum of loss and wastage; but especially important are the preparations that must be made for the very different food production pattern proposed above.

"Assembly" means the gathering of food products into quantities large enough to be shipped efficiently and moved through the regular trade channels. With increasing production by many of the smaller to medium farmers, plus the decline of the itinerant truckers who formerly gathered a large part of this type of produce, special efforts are needed to see that all possible food from even the smallest farms moves into distribution channels. The need is further apparent from the fact that the proposed food production program means that many regions will be producing foods that they never grew before, or grew in much smaller quantities.

The government must assume the ultimate responsibility for the collection and assembly of these foods, though this does not at all mean that government will do the whole job; on the contrary, every encouragement must be given to the use of regular distribution channels. But government must be ready to step in and see that the job is done, by whatever means.

The new physical facilities likely to be needed consist primarily of assembly points along main highways or rail routes, providing a place for buyers to purchase the assembled foodstuffs as well as simple facilities for shelter and temporary storage. The desirable goal is to have these assembly points built at selected locations by private capital, and the assembled food purchased by regular wholesale dealers; but if necessary the government must be prepared to build or finance the building of the assembly centers themselves, and also to buy the crops so assembled.

The assembly system for an entire region should naturally be planned together, taking into account all existing facilities. It is obviously not desirable to try to establish an assembly center in every town, for often the surplus produce of an entire area must be combined in order to make up a quantity large enough to pass into regular wholesale distribution channels. A good assembly system is often the means whereby a sudden local surplus can be distributed instead of being wasted. These "flash" surpluses are serious problems: in 1942 one-third of the Texas cabbage crop was unharvested; and in 1943 a bumper crop of carrots in the Imperial Valley of California was saved only by dehydrating them, though there was no need for such large quantities of dehydrated carrots.

Food Transportation

One method of preventing this wastage is through careful planning of food transportation, so that perishable foods will be given a preferred claim on transportation facilities. Another important gain can be made by the reduction of cross-hauling. In the case of sugar, the entire country has been divided into zones, allocated to the different ports of entry where imported sugar is refined and to interior refineries in the cane and beet sugar areas. The zones are adjusted from time to time as demand and supply conditions require. The result has been a saving estimated in 1942 at about 450 million ton-miles, which is approximately 15% of the total transportation required for sugar in 1942.

There are other foods where revised transportation practices would lead to large savings. In 1942 some 12,000 carloads of juice grapes, used mostly for wine, moved from the west coast to the east, the average haul being 2,000-2,500 miles. Peak movement is in October when refrigerator cars moving to the east are in greatest demand. Most of these grapes could be made into wine in California and shipped east later without refrigeration. If this were done for 75% of the total juice grapes now being shipped, it would result in a saving of 18 to 22 million refrigerator car miles, most of it at a time when the shortage of this type of transportation is most acute.

Various other wastes and spoilages in transportation, storage, and handling should be attacked consistently, for some of them are high in certain foods. A limited number of surveys indicate that losses in fruits and vegetables in retail stores alone amount to about 6%, and in certain perishable items may run as high as 12-15%.

Better Seasonal and Regional Distribution

One major distribution problem (before the food reaches the hands of the ultimate consumer) is some method of spreading supplies evenly from region to region, and among the seasons of the year, so that each region and season has its appropriate share. Correct seasonal distribution is maintained by withholding the proper amounts of foods from the market in peak seasons, for use in the lean months. In the case of rationed foods, this means first of all that permissible year-round consumption should not exceed total available supplies. Informal government agreements with the trade as to the rate at which supplies in storage are released may also be valuable, in the case of commodities (such as potatoes) where strict rationing is not justified but occasional seasonal shortages may develop.

More serious is the problem of even distribution by regions, accentuated by the advent of widespread rationing. With the advent of price ceilings, along with the fact that all the civilian allocation of any rationed commodity can easily be sold, wholesalers tend to concentrate shipments in those areas where profits are highest and transportation and distribution costs lowest. The resulting shortages in certain areas especially those with large recent increases in population, tend to be self-worsening, since the shortage encourages black market operations.

The only answers seem to be price adjustments to encourage appropriate regional flow, and, if necessary, special earmarkings or releases of rationed foods to the shortage areas.

Processing Problems

At a glance, it would seem that the drastic proposed shift in crops would call for similar shifts in processing plants, including large-scale expansion in some areas or for some crops in all areas. This is not generally the case, however; on the whole our present food processing equipment seems adequate, given capacity operation plus minor shifts from one region to another, to adjust to the new situation.

Of the processing problems likely to arise as a result of the proposed new production plan, the most outstanding would seem to be in the cases of dried skim milk and sweetpotatoes. The necessary new facilities for dried skim milk have already been discussed in Section II. In the past only about 40% of the entire sweetpotato crop has been cured and marketed commercially, the remainder being consumed on the farm, fed to livestock, or wasted. The proposed production program calls for an increase in sweetpotato consumption of 173% and reaching this goal will call for an entirely revised marketing program which would cover curing, storage, assembly, marketing and consumer education. Perhaps most important is teaching farmers how to build curing facilities and how to store sweetpotatoes; but there is need for an educational job to stimulate sweetpotato consumption throughout the country on a much larger scale than in the past.

THE UNIVERSITY OF CHICAGO

DEPARTMENT OF THE HISTORY OF ARTS
AND ARCHITECTURE
AND
THE MUSEUM OF ART
AND ARCHITECTURE

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF THE HISTORY OF ARTS
AND ARCHITECTURE
AND
THE MUSEUM OF ART
AND ARCHITECTURE

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF THE HISTORY OF ARTS
AND ARCHITECTURE
AND
THE MUSEUM OF ART
AND ARCHITECTURE

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF THE HISTORY OF ARTS
AND ARCHITECTURE
AND
THE MUSEUM OF ART
AND ARCHITECTURE

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF THE HISTORY OF ARTS
AND ARCHITECTURE
AND
THE MUSEUM OF ART
AND ARCHITECTURE

Government Procurement

The policies which guide government procurement of food for military and foreign use, and the methods selected to carry out those policies, are of broad and continuous effect on the entire war food program. It could not be otherwise when so large a portion of our total food supply is government-purchased, as indicated by the chart on page 17.

The first effect of government procurement policies is their influence on food production. In general, the procurement authorities should make every effort to gear their activities into the production program, as regards price incentives, crop expansion, and shifts from some crops to others. In most food groups, the percentage which is government-procured is so large that it can hinder seriously or defeat entirely the production adjustments which are needed.

The dried milk-dried egg situation is a case in point. Most of both these commodities are government procured at prices of about 14¹/₂¢ and \$1.14 for dried milk and dried eggs respectively. An increase of a few cents per pound for dried milk would result in a highly desirable increase in dried milk production, assuming that the necessary drying facilities are available, since in addition to giving milk producers and processors a better price it would bid against the feed use of skim milk. This kind of procurement action can be a powerful tool in achieving a desirable production program.

While it is traditional that food procurement should be carried on at the least possible expense, this involves in wartime a good deal more than simply keeping to a minimum total sum laid out for food. Continuous attention should be paid to the problem of inflation, of keeping food prices from starting the inflationary spiral which in a few weeks can increase the total cost of the war by amounts far greater than those directly involved in government food procurement. No substantial purchase program should be planned without painstaking consideration of the effect it will have on the battle against inflation.

Government Procurement and Civilian Consumption

Perhaps greater than its effect on food production is the influence of government procurement policy on civilian consumption. The most disastrous results can come from failure to plan with this in mind. First of all, there must be the most careful choice of when and where supplies should be bought. It is imperative that food be purchased only in those regions which produce a surplus over and above local needs (figured on wartime consumption levels), and that purchases be concentrated in those seasons when the surplus is greatest. Some regions should be tapped only during one season: California, for example, is a meat surplus area during the spring, but must import meat during the remainder of the year. Failure to observe this principle will result in severe regional shortages with attendant hardships, break-down of rationing, and stimulus to the black market.

The greater the total amount of government procurement, the more widely must that procurement be spread among the food items as whole and among the various forms and qualities in which the food items are procured. Specifications are essential--food for shipment abroad must be compact and easily preserved. But

within limits, government procurement must draw from as many foods, of as many qualities and processed in as many forms as possible.

In sharp contrast to the last war, government food procurement today is tending to concentrate in the hands of two major agencies, the Army and the Food Distribution Administration (with the Navy securing most of its needs through these two.)

The trend toward coordination of these agencies has already brought important advantages such as simplification of procurement standards, the spreading of government purchases over different types and qualities of foods and the avoidance of the disconcerting (and at times disastrous) results which arise from actual or reported entry into or departure from a given market. The progress that has already been made along these lines through coordination indicates that the objectives can be fully met if present gains continue.

Civilian Distribution

After assembly, processing, and passage through wholesale channels into the hands of the retailer, the next step in the food chain brings it into the hands of the civilian consumer. And overwhelming success in all the previous steps can be completely vitiated in a moment if civilian distribution is a failure.

The first requirement is that civilian supplies be distributed equitably, for nothing is so destructive to morale, and to the necessary public support that any food distribution scheme must have, as obviously unfair distribution of scarce food supplies. In time of peace we allow food to be distributed by the price structure; in war this is impossible because of the disastrous effects which the resulting high prices would have on the lower income groups. Other controls are necessary, not only to insure equitable civilian distribution but also to maintain stocks at desired levels and assist orderly government procurement for military and foreign use. Chief among these controls is rationing.

The first conditions for a successful rationing system are that the rations must be available and they must be reasonably adequate. All important foods must be rationed where the demand exceeds the supply at current prices, and all of any rationed food must be brought under the ration plan. But it is still essential, as previously stressed, to have an adequate government control of the entire supply of any rationed food. That is to say, the entire production of any rationed food must move through regular, legitimate trade channels, subject to the controls and adjustments that will from time to time be necessary. The heart of a black market is the "wild" fraction of any food, not passing through normal channels nor subject to any checks or controls. This channeling of all rationed foods in this manner is likewise the necessary precondition to making the individual ration adequate and available.

Of all the possible rationing methods, the point system in effect for most U.S. rationed foods has the great advantage of flexibility. The most flexible scheme would be one which put all rationed foods under the same point system. However,

of the ... of the ... of the ...

... of the ... of the ... of the ...

... of the ... of the ... of the ...

... of the ... of the ... of the ...

... of the ... of the ... of the ...

... of the ... of the ... of the ...

... of the ... of the ... of the ...

... of the ... of the ... of the ...

the degree of control over any rationed food decreases in proportion to the number of foods under the same system; therefore, a group of point systems, each covering only foods that are ordinarily substitutes for one another, would seem a practical compromise.

Unequal Needs

One flaw in our present rationing system is its assumption that everyone has equal needs, and this has resulted in serious inequalities. Young children do not require the same amounts of food as adults, and as a result families with young children may live better than those without. People who can afford to eat in restaurants merely add that much more to their food ration. Recently, it has become possible for some workers in certain isolated localities to get extra meat. However, this represents only the barest beginning toward the necessary realization that different individuals have quite different food needs in fulfilling their responsibilities to the war effort.

One method of meeting this problem is through differential rationing--which would adjust the number of food points for the number and ages of children in any family for example. Allowance for other differences, such as the nature of the work in which the individual is engaged, is extremely difficult, besides holding large possibilities for abuse and ill feeling. The best method of meeting the extra needs of industrial workers is probably by group feeding in factory canteens, which has already been successfully tried in England. Children's needs for milk and other protective foods can be met by school lunches, which are more important today because of the number of families where both parents are working. At the same time, civilian restaurants should be rigidly restricted to moderate-sized portions, since they represent a method whereby higher-income groups can increase their consumption inequitably. It probably will be necessary in the future to require the surrender of food ration stamps for restaurant meals, to reduce and ultimately eliminate this inequality.

Ration Cards Are Not Enough

Too frequently it is taken for granted that all that is necessary to assure consumers of their rightful share of any rationed food is to give them ration books. This is unfortunately not the case, for a number of reasons. First, food is not always made available to some consumers. More important, the combination of high prices and low incomes prevent many consumers from buying their "rational" allowance. There are many people in the U.S.--the number has been estimated at 24 million--who do not have the money to buy an adequate diet. As food prices rise, their plight will become more serious. As already stated in Section II, this low-income group should receive first attention in our attempts to equalize civilian consumption, and subsidies or any other necessary methods should be used which will give this group the nutrients they need to make their contribution to the war effort.

Conserving Food in the Home and Home Food Production

A shocking percentage of the food which comes into the American kitchen is wasted, either through ignorance, carelessness, or lack of proper facilities. All these wastes are not individual matters, but a concern of the entire community, for any unnecessary drain of the food supply affects everyone. However, these practices are not to be dealt with by prohibitions or government regulations, but rather by a continuous campaign of education and publicity. The purpose is obviously so much to the advantage of all consumers that the success of the campaign will depend solely upon its size and the skill with which it is organized.

The broad Victory Garden program of today should be encouraged and expanded in every way. Instead of worrying about the possible wastes by Victory Gardeners, special pains should be taken to make materials available and to remove all institutional obstacles (such as municipal ordinances against gardens and chickens); for any waste of material by amateurs is slight in comparison with the large savings in labor, transportation, and other resources needed for the same amount of food commercially produced. Britain's "Dig for Victory" program is a fair sample of what the U.S. could achieve.

Food Management in a Democracy

There are two major parts to a successful war food program. The first deals with the tremendous effort which must be made in the production and distribution field, and it is with this part that we have been dealing primarily up to now. The second is how the consuming public cooperates with and adjusts itself to this production program. To put it another way, the second part is the willingness of the public to support a food program designed to win the war, although it means certain sacrifices by consumers and certain inconvenient changes in their food habits. And without this public support, the best-conceived food production program can never succeed.

Whole-hearted public support for the war food program demands first that the public must realize that the sacrifices asked of them are essential to the prosecution of the war. The average American having always defined "enough food" as all he wants and can afford to buy, bristles at rationing and other restrictions and seeks petulantly to cast the blame for these restrictions on the food we are sending to our Allies, waste by the armed forces, official bungling, etc. Whether expressed publicly or circulated as rumors, such complaints must be met in every forum through which the public can be reached, with the truth about the tremendous load our Allies are carrying, the efficient use of food by our armed forces, the considerable achievements and the even greater potentialities of our war food mobilization, etc.

If the people understand the need of the sacrifices asked of them, the next step is to prove that these sacrifices are being shared equally by all. That American do not now believe this is evident in the widespread violations of rationing and price regulations by people who would be shocked at the idea of purse snatching. Our people are not liars or law violators by nature: they simply do not yet identify their own interest and the winning of the war with support of the war food program.

This problem can best be met by wiping out some of the most glaring inequalities--such as the fact that a wealthy man can still ruin his stomach by eating three dinners if he so chooses. Violation of food regulations should be made unprofitable and unnecessary where possible; the remaining minority who persist in sabotage should be ferreted out and punished with all the severity we can muster.

These two pre-conditions for support of a war food program are not to be had through official handouts and bright, shiny slogans: they can be secured only through the government's taking the whole public into its confidence, telling the truth promptly and fully. The public is quite capable of understanding the size of our food needs, the extent of the necessary production effort; the best use of our food supplies, the need for stock-piling; the principles of fair civilian distribution; the purposes behind food regulations; and the tremendous gains that flow from making the food program a success. Tell these things candidly and honestly, and public support for a vigorous war food program is assured.

